

SCREENING SITE INSPECTION REPORT

Star Lake Canal, a.k.a. Jefferson Canal

Port Neches, Texas

TX0001414341

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Screening Site Inspection Report

**Star Lake Canal, a.k.a. Jefferson Canal
Jefferson County, Texas
TX0 001 414 341**

Prepared in cooperation with the

U.S. Environmental Protection Agency

Prepared by

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NOTE

The State predecessor agencies: Texas Water Quality Board (TWQB), Texas Department of Water Resources (TDWR), Texas Water Commission (TWC), and Texas Air Control Board (TACB), referred to throughout this report are now known as the Texas Natural Resource Conservation Commission (TNRCC). The new agency, TNRCC, became effective September 1, 1993, as mandated under State Senate Bill 2 of the 73rd Regular Legislative Session.

SECTION 1

INTRODUCTION

The Texas Natural Resource Conservation Commission (TNRCC) through a multi-site cooperative agreement with the U.S. Environmental Protection Agency (USEPA) has been tasked to conduct a Screening Site Inspection of the Star Lake Canal (a.k.a Jefferson Canal) site ("the Site"). The EPA identification number for the site is TX0001414341.

The Star Lake Canal (SLC) conflues with Molasses Bayou as it empties into the Neches River. The canal is approximately 2 miles long. Land surrounding the canal is undeveloped, residential and industrial. The canal begins at 29° 58' 28" N Latitude and 93° 56' 32" W Longitude and empties into the Neches River at 29° 58' 57" N Latitude and 93° 53' 38" W Longitude. The Jefferson Canal conflues with the SLC between State Highway 366 and Sara Jane Road. SLC then drains directly to Stream Segment Number 0601 of the Neches River in the Neches River Basin. See Figure 1 for the geographical location of the site.

SITE OBJECTIVE WITH RESPECT TO THE PREREMEDIAL PROCESS

The preremedial stage of the Superfund process involves an expanded preliminary assessment (PA) and a site inspection (SI) stage consisting of an SSI and, if necessary, a listing site inspection (LSI). The activities described in this work plan are designed to fulfill the requirements of a focused SSI.

A PA has already been conducted for the site. This SSI will build upon data collected during the PA by the collection of additional data through background information research and the collection of environmental samples to further characterize conditions at the site. Sampling conducted during the SSI was designed to identify the types of contaminants present, if any, to assess whether a release of hazardous substances has occurred, look for evidence of actual human and environmental exposure to contaminants, and determine whether the site will move forward to an LSI or be designated as "no further remedial action planned."

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SECTION 2

SITE BACKGROUND AND DESCRIPTION

Site Information

A PA was performed on July 23, 1996 for the Star Lake Canal (SLC) in which the surface water pathway was identified as the primary pathway of concern.

The SLC confluent with Molasses Bayou as it empties into the Neches River. The canal is approximately 2 miles long. Land surrounding the canal is undeveloped, residential, commercial and industrial. The canal begins at 29° 58' 28" N Latitude and 93° 56' 32" W Longitude and empties into the Neches River at 29° 58' 57" N Latitude and 93° 53' 38" W Longitude. The Jefferson Canal confluent with the SLC between State Highway 366 and Sara Jane Road. SLC then drains directly to Stream Segment Number 0601 of the Neches River in the Neches River Basin. See Figure 1 for the geographical location of the site.

A sampling inspection by the Texas Department of Water Resources (TDWR) in March, 1983, documented the presence of hazardous substances in material dredged from the banks of the Jefferson Canal (Reference 3). This canal was used by Chemall, Inc (now Calabrian Chemicals) and Texaco Chemical Company (now Huntsman Corporation) as an outfall for stormwater and wastewater for an unknown period of time. The Jefferson Canal confluent with SLC in an area between State Highway 366 and Sara Jane Road, a.k.a. East Port Neches Avenue (see Figure 1).

Waste Containment/Hazardous Substance Identification

The information used to identify the wastes which may be present in the SLC was obtained from a review of state records. The Jefferson Canal was documented to have sediments in which hazardous substances had been deposited, stored, disposed, or placed. Results from the TDWR March, 1983 sampling event showed the following hazardous substances in material dredged from the Jefferson Canal: Naphthalene (9280 mg/kg), acenaphthene (330 mg/kg), acenaphthylene (2140 mg/kg), fluorene (1140 mg/kg), phenanthrene (2050 mg/kg), anthracene (300 mg/kg), pyrene (535 mg/kg), benzo-a-anthracene (160 mg/kg), benzo-b-fluoranthene (15 mg/kg), benzo-a-pyrene (60 mg/kg), benzo-a-fluoranthene (15 mg/kg), and chrysene (150 mg/kg). Property owned by Chemall, Inc. was also documented to be contaminated by toxaphene and pentachlorophenol in the vicinity of the Jefferson Canal (Reference 3).

During the PA, conducted on July 24, 1996, a flat bottomed boat was used to perform reconnaissance activities in SLC and the Jefferson Canal. Water flow rates in the Jefferson Canal were very low during the PA. For the majority of its length the main channel of SLC was scoured out to a hard clay bottom, while sediment deposition occurred away from the main channel in areas of low flow rates. Depths of water in SLC varied greatly and several times the boat became stuck in shallow water. During

one such incident near the dam across SLC, approximately 0.25 miles upstream of the Sara Jane Road bridge, the propeller of the outboard motor was run at full-throttle in the shallow water to dislodge the boat. A considerable amount of sediment was thrown up that had a dark grey color and strong chemical odor.

For this SSI, the source areas were considered to be sediments in the vicinity of the dam across SLC and Jefferson Canal sediments from the SLC to the hurricane protection levee (see Figure 2; source areas are outlined in red). It is conservatively estimated that the source areas total approximately 62,500 ft² (total source area was estimated using a 7.5 minute topographic quadrangle and an Alvin #1112 map wheel). It is assumed that this area is covered with an average of 2 feet of sediment (estimated by direct observation during sampling) to give an estimated volume of 4,629 yd³ of source material.

Samples within the source areas (SE-16, SE-19, SE-20 and SE-21) were taken with a 2 foot long, stainless steel, soil coring device with a dedicated polyethylene zero-contamination tube inserted into the soil coring device at each sample location. All sediment samples were placed in dedicated, decontaminated stainless steel bowls. Samples were taken from this with dedicated, decontaminated stainless steel spoons and loaded into certified clean 4 ounce glass jars with a Teflon lined lid. Table 1 shows the inorganic hazardous substances found within the source areas and their concentrations. See Table 3 and Figure 2 for descriptions and locations of these samples.

Table 1: Inorganic Hazardous Substances in Source Areas (mg/kg)

CLP Traffic Report No./Sample Location No.	% Solid	Arsenic	Barium	Chromium	Manganese	Mercury	Thallium	Cyanide
MFGP45/SE-16	43.9						3.3	1.5
MFGP61/SE-19	45.9					0.76		
MFGP62/SE-20	59.1	21	436		491		3.3	
MFGP63/SE-21 (Field Duplicate of SE-20)	58.9	14.2	411		468			

Table 2 shows the organic hazardous substances found within the source areas and their concentrations. See Table 3 and Figure 2 for descriptions and locations of these samples.

Table 2: Organic Hazardous Substances in Source Areas ($\mu\text{g/kg}$)

Hazardous Substance	FEY77/SE-16	FEZ01/SE-19
Naphthalene		6700
2-Methylnaphthalene		8000
Acenaphthylene	1200	
Acenaphthene	14000	8800
Fluorene	18000	9200
Phenanthrene	55000	21000
Anthracene	11000	5000
Fluoranthene	12000	8500
Pyrene	22000	11000
Benzo(b)fluoranthene		4200
Benzo(k)fluoranthene		4700
Aroclor 1254	130	




 Protecting Texas by
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Texas Natural Resource Conservation Commission
GIS Section (Mail Code 197)
P. O. Box 13087
Austin, Texas 78711-3087

Figure 1
**Star Lake Canal
&
Jefferson Canal Site**
CERCLIS No. TX0001414341

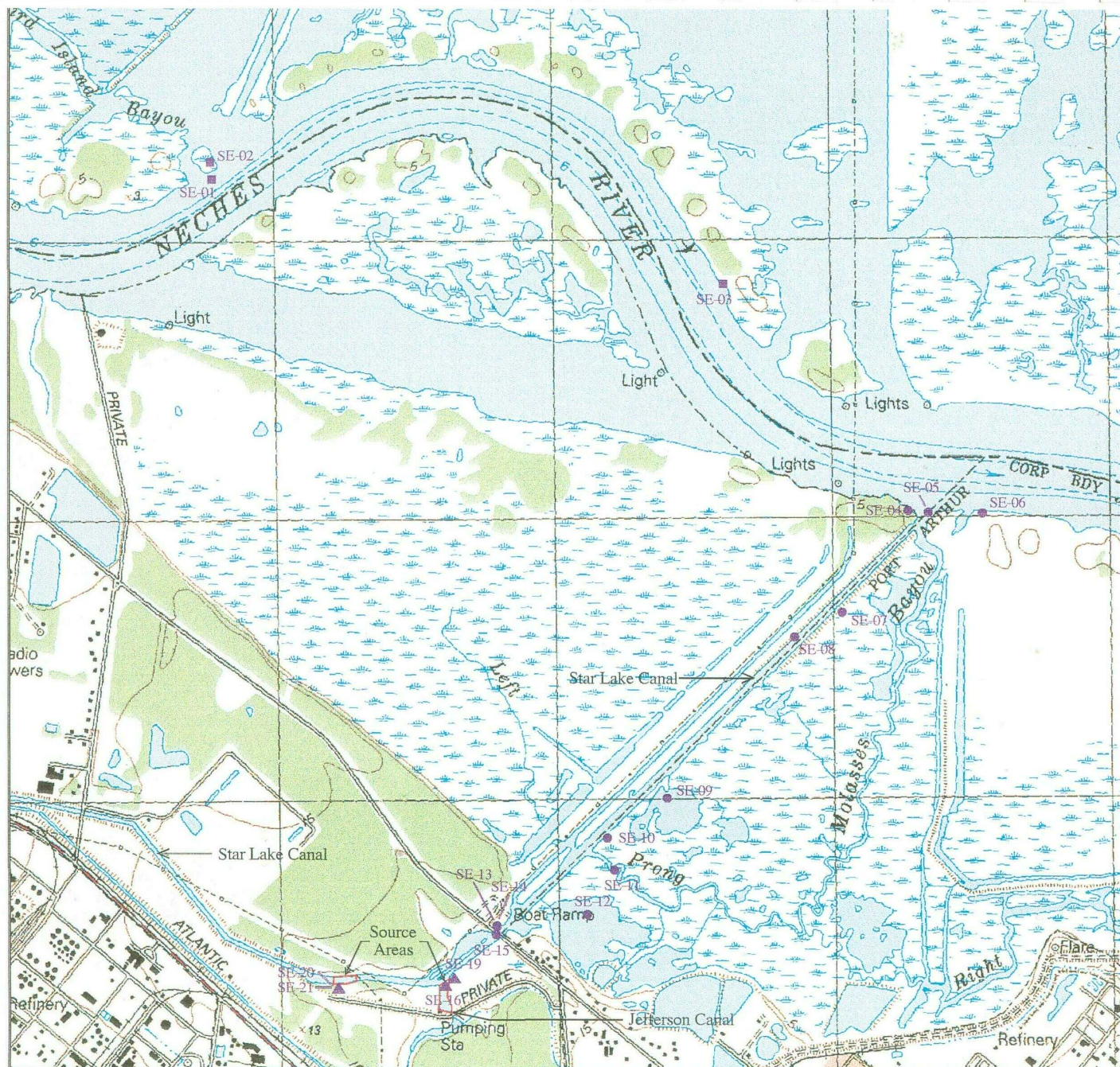
Base Map:
Port Arthur North 7.5 Minute Quad
The base data used in this map is a Digital Raster
Graphic (DRG), which is a digital version of a
U.S. Geological Survey 7.5 Minute Quadrangle.
The DRG was produced by TNRCC using USGS
standards.
For a description of map symbols, see the USGS
publication: Topographic Map Symbols, National
Language Scale Series.

Texas Statewide Mapping System
(TSMS) Projection
Scale 1:24,000
(One inch equals 2,000 feet)
February 4, 1997



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the Texas Natural Resource Conservation Commission. No claim
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ability for a particular use. For more information concerning this
map, contact Ben Allison, GIS Section Manager, Information
Resources Division, at (512) 239-0830.

MMcDonough CRF-97020460



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Figure 2

Star Lake Canal & Jefferson Canal Sample Locations

CERCLIS No. TX0001414341

Sample Locations:

Source: Differentially corrected GPS
measurements obtained by TNRCC Pollution
Cleanup Division.

- ▲ Source Samples
- Target Samples
- Background Samples

Base Map:

Port Arthur North 7.5 Minute Quad

The base data used in this map is a Digital Raster
Graphic (DRG), which is a digital version of a
U.S. Geological Survey 7.5 Minute Quadrangle.
The DRG was produced by TNRCC using USGS
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For a description of map symbols, see the USGS
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Texas Statewide Mapping System
(TSMS) Projection

Scale 1:19,050
(One Inch Equals Approx. 1,587 Feet)

February 4, 1997



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Resources Division, at (512) 239-0850.

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GROUNDWATER PATHWAY AND TARGETS

Characteristics

The SLC is located on the seaward margin of the Gulf Coast Plain of Texas. Layers of sediments in this area are of Cenozoic age and can be tens of thousands of feet thick at the coastline. These clastic sediments of sand, silt and clay represent depositional environments ranging from nonmarine at the outcrops of most units to marine environments with distinctive suites of fossils. The oscillations of ancient seas and changes in the amount and source of sediments deposited, caused facies changes downdip and along strike. Thus, a time-stratigraphic unit of equivalent age may consist of sand in one area, sandy clay in a second area and clay in a third area. Subsidence within the depositional basin, along with a rising land surface, caused the stratigraphic units to thicken gulfward. Growth faults have greatly increased the thickness of some stratigraphic units within short distances. These factors contribute to the heterogeneity of units from place to place, making correlation between them difficult (Reference 4).

The sediments which make up the surface of the Coastal Plain are the : a) Quaternary alluvium of sand, silt and clay; b) the Beaumont Clay; c) the Montgomery Formation; d) the Bentley Formation; and e) the Willis Sand. Collectively, these layers make up the Chicot Aquifer. Underlying these deposits are Tertiary stratigraphic units: the Goilad Sand, Flemming Formation, Oakville Sandstone and the Catahoula Sandstone. These Tertiary deposits make up the Evangeline Aquifer. Together, the Chicot and Evangeline aquifers make up the Gulf Coast Aquifer (Reference 4).

Targets

Drinking water in the area of the canal is supplied by the Lower Neches Valley Authority whose surface water intake points are north of the study area, in the City of Beaumont.

There is no documentation indicating that wells in the vicinity of the canal have been contaminated by hazardous substances attributable from the canal. No wellhead protection areas exist near the canal. No public supply wells exist within a 4 mile radius of the canal.

A 1-mile radius from the beginning and endpoint of the canal was evaluated for the presence of drinking water wells by a review of State of Texas water well reports. The following information was developed:

- Within 0 - 0.25 miles of the site, no wells were identified.
- Between 0.25 - 0.50 miles of the site, no wells were identified.

HRS In-Water Segment Definitions

Source Area 1

HRS In-Water Segment 1 (approximately 1.32 miles) is defined as the in-water distance from PPE₁ (MFGP62/63, SE-19/20) along Star Lake Canal to sample location SE-07 (MFGP49). This is the farthest downstream observed release sample for this source area (see Figure 3). No surface water use permits exist within this in-water segment. No drinking water intakes exist near PPE₁. This segment is not used as a fishery. No flow rate data is available for the Star Lake Canal as it is a tidally influenced man-made ditch that flows into other surface water (HRS Guidance, page 207).. Wetland areas exist along both sides of both branches of this in-water segment (Reference 10). A search of the Texas Biological and Conservation Data System revealed the presence of sensitive species and natural communities in the vicinity of the study area (Reference 8).

HRS In-Water Segment 2 (approximately 0.29 miles) is defined as the in-water distance from sample location SE-07 (MFGP49) along Star Lake Canal to its confluence with the Neches River (see Figure 3).

HRS In-Water Segment 3 (approximately 3.04 miles) is defined as the in-water distance along the Neches River (from its point of confluence with Star Lake Canal) to Sabine Lake (see Figure 4). One surface water use permit exists along this in-water segment for industrial purposes. No drinking water intakes exist along this in-water segment. Average discharge in this in-water segment is 1,200 cubic feet per second (Reference 5). This in-water segment is documented as a fishery (Appendix B). Wetland areas (estuarine emergent) exist along this in-water segment (Reference 10). A search of the Texas Biological and Conservation Data System revealed the presence of sensitive species and natural communities in the vicinity of the study area (Reference 8). This in-water segment is used as a resource by sport fishermen (Reference 11) and is designated for contact recreation (Reference 5).

HRS In-Water Segment 4 (11.67 miles) is defined as the in-water segment in Sabine Lake to the 15 mile TDL (see Figure 4). No surface water use permits exist along this in-water segment. No public drinking water intakes exist along this in-water segment. No flow rate data is available for this in-water segment as it is a coastal tidal water. This in-water segment is designated as a fishery (Reference 11). A search of the Texas Biological and Conservation Data System revealed the presence of sensitive species and natural communities in the vicinity of the study area (Reference 8). This in-water segment has resource uses for contact recreation, high quality aquatic habitat and shellfish waters (Reference 5).

- Between 0.50 - 1 mile of the site, one irrigation well and one domestic well was identified. Both wells are hydrologically upgradient from the beginning of the canal.

The groundwater pathway was not evaluated during this SSI.

SURFACE WATER PATHWAY AND TARGETS

Characteristics

The SLC and Jefferson Canal are located within the Neches River Basin, draining directly to TNRCC Water Quality Segment Number 0601. Two distinct 15 mile target distance limits (TDLs) exist for this site and will be defined in the Targets section.

The Neches River Basin drains approximately 1,145 miles² with an average total discharge of 1,200 cubic feet per second. It is designated for contact recreation and intermediate quality aquatic habitat. Currently, this segment has 5 on-segment monitoring stations and 1 off-segment monitoring station (Reference 5).

Natural drainage in the study area is shown in Figure 1. SLC begins near the intersection of State Highways 366 and 136 and flows in a southeasterly direction for approximately 1 mile before turning in a northeasterly direction as it flows approximately 1 mile to the Neches River. The Jefferson Canal flows in a northerly direction and confluent with SLC where it turns to the northeast.

The Probable Points of Entry (PPE) for source sediments lie within the SLC at the lowermost point of observed contamination, identified in Figure 1. Sensitive environments and wetlands exist within the source area and downstream of the PPEs as SLC flows toward the Neches River. The Neches River downstream of SLC is a documented fishery. No drinking water intakes are located along the 15 mile target distance limit (TDL).

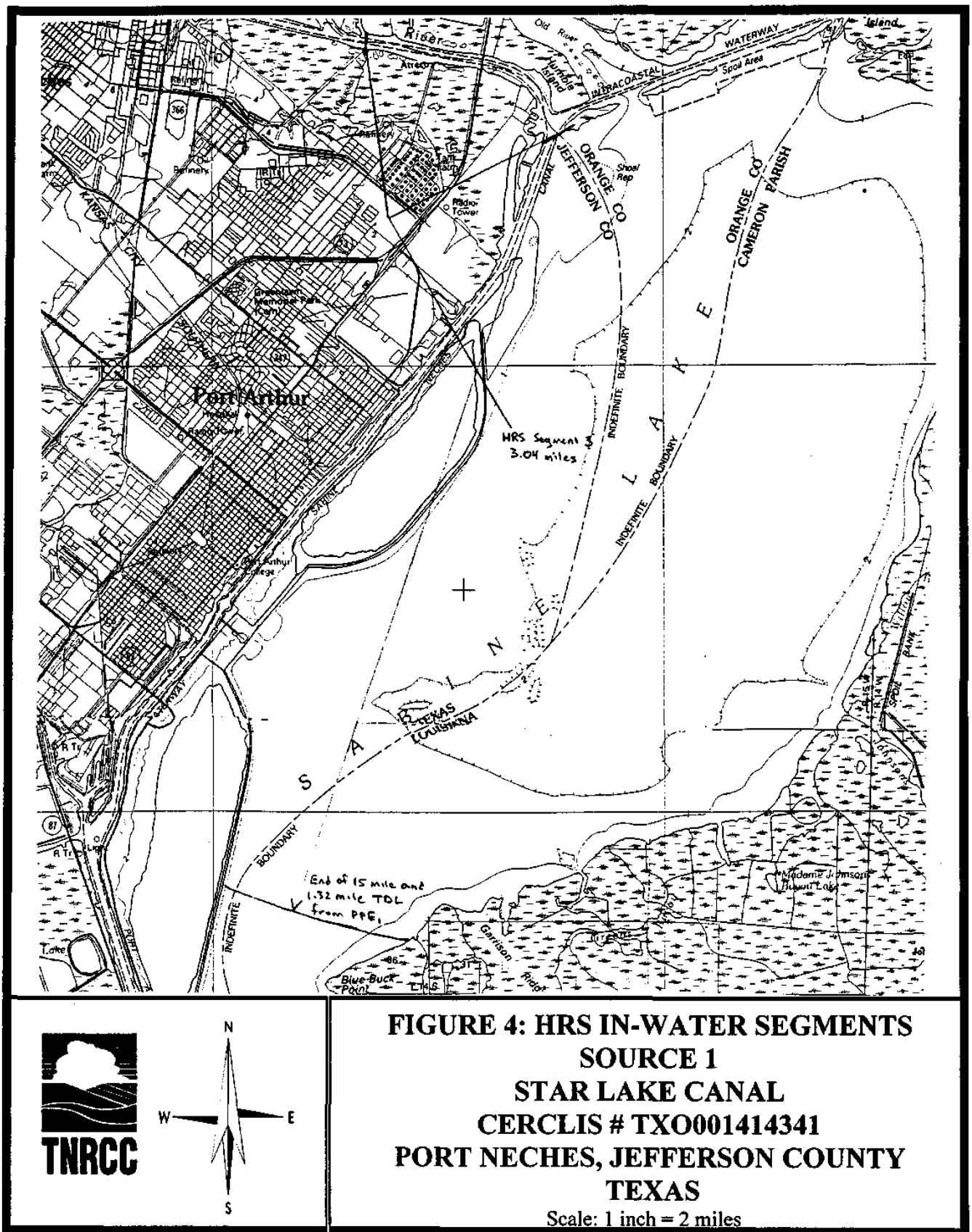
Annual average precipitation for this region is 51 inches per year (Reference 6).

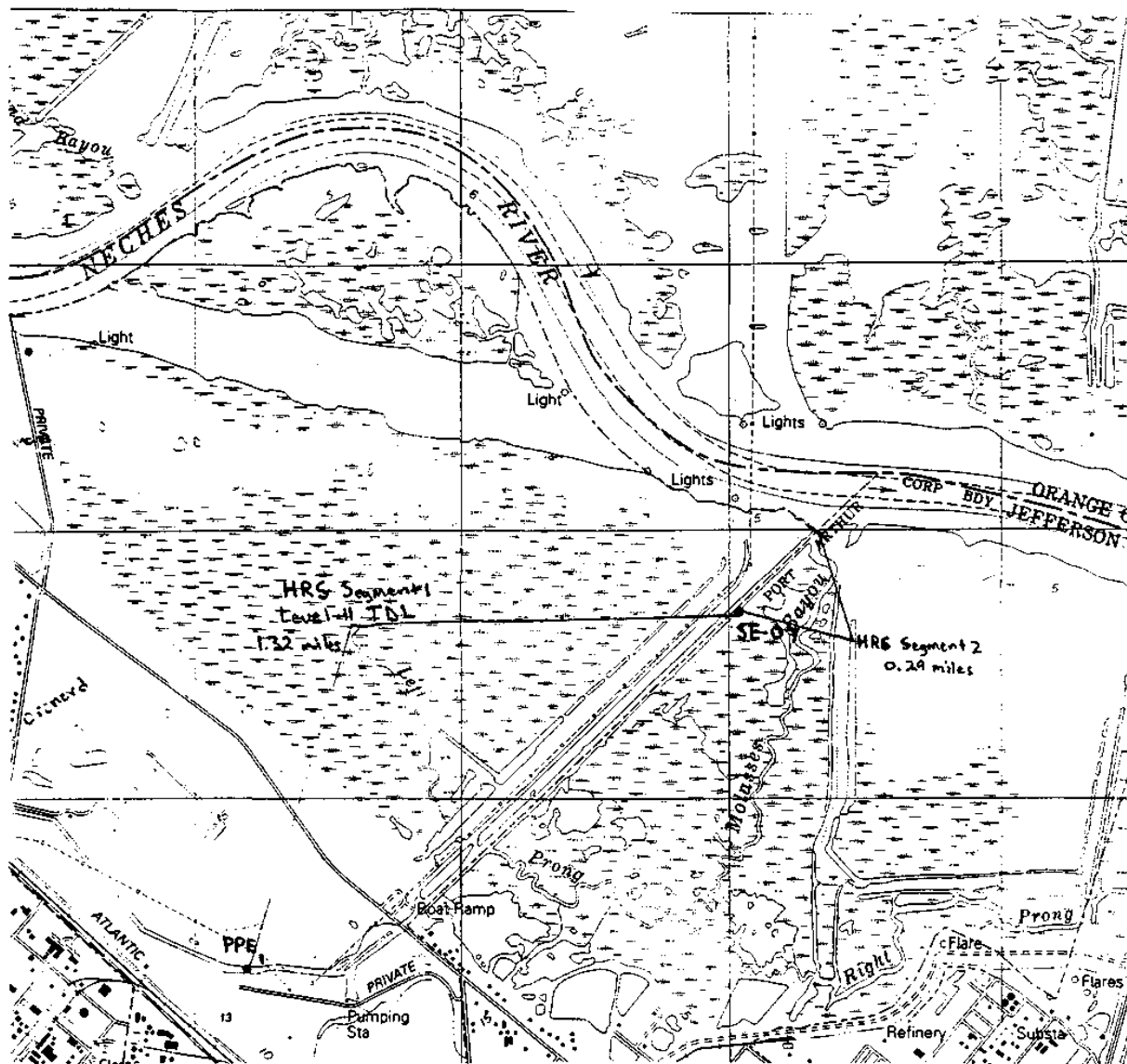
Both canals are within the 100-year floodplain.

TNRCC files note that wastewater has been discharged to the Jefferson Canal in violation of the Texas Water Code.

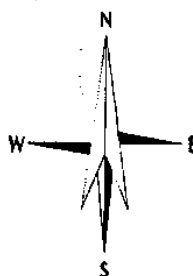
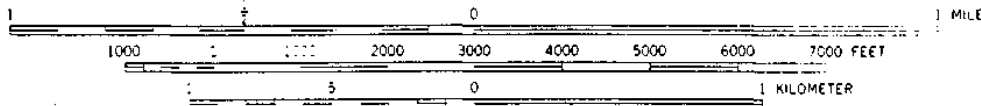
Targets

Target Distance Limit (TDLs) for the SLC are as follows. Since there are two distinct areas of observed contamination (source area 1: SE-20 and SE-21; source area 2: SE-16 and SE-19), there are two distinct PPEs: PPE₁ and PPE₂. See Figure 2 for the locations of the PPEs.





SCALE 1:24 000



**FIGURE 3: HRS IN-WATER SEGMENTS
SOURCE 1
STAR LAKE CANAL
CERCLIS # TX0001414341
PORT NECHES, JEFFERSON COUNTY
TEXAS**

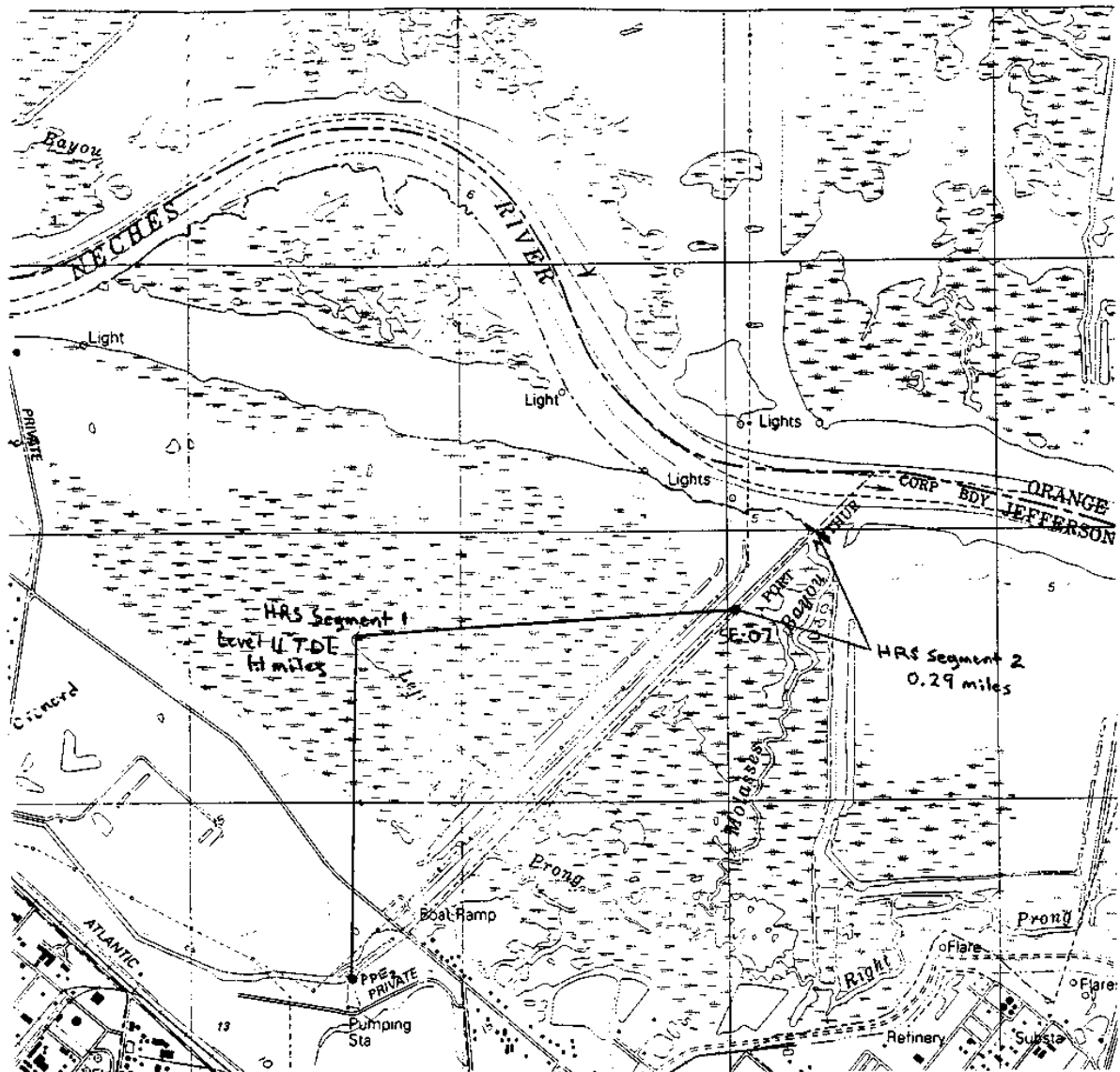
Source Area 2

HRS In-Water Segment 1 (approximately 1.10 miles) is defined as the in-water distance from PPE₂ (MFGP40/SE-16) along Star Lake Canal to sample location SE-07 (MFGP49). This is the farthest downstream observed release for this source (see Figure 5). No surface water use permits exist within this in-water segment. No drinking water intakes exist near PPE₂. This segment is not used as a fishery. No flow rate data is available for the Star Lake Canal as it is a tidally influenced man-made ditch that flows into other surface water (HRS Guidance, page 207). Wetland areas exist along both sides of both branches of this in-water segment (Reference 10). A search of the Texas Biological and Conservation Data System revealed the presence of sensitive species and natural communities in the vicinity of the study area (Reference 8).

HRS In-Water Segment 2 (approximately 0.29 miles) is defined as the in-water distance from sample location SE-07 (MFGP49) along Star Lake Canal to its confluence with the Neches River (see Figure 5).

HRS In-Water Segment 3 (approximately 3.04 miles) is defined as the in-water distance along the Neches River (from its point of confluence with Star Lake Canal) to Sabine Lake (see Figure 6). One surface water use permit exists along this in-water segment for industrial purposes. No drinking water intakes exist along this in-water segment. Average discharge in this in-water segment is 1,200 cubic feet per second (Reference 5). This in-water segment is documented as a fishery (Appendix B). Wetland areas (estuarine emergent) exist along this in-water segment (Reference 10). A search of the Texas Biological and Conservation Data System revealed the presence of sensitive species and natural communities in the vicinity of the study area (Reference 8). This in-water segment is used as a resource by sport fishermen (Reference 11) and is designated for contact recreation (Reference 5).

HRS In-Water Segment 4 (11.67 miles) is defined as the in-water segment in Sabine Lake to the 15 mile TDL (see Figure 6). No surface water use permits exist along this in-water segment. No public drinking water intakes exist along this in-water segment. No flow rate data is available for this in-water segment as it is a coastal tidal water. This in-water segment is designated as a fishery (Reference 11). A search of the Texas Biological and Conservation Data System revealed the presence of sensitive species and natural communities in the vicinity of the study area (Reference 8). This in-water segment has resource uses for contact recreation, high quality aquatic habitat and shellfish waters (Reference 5).



SCALE 1:24,000

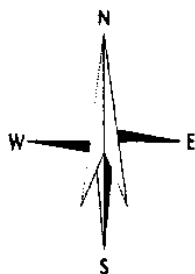
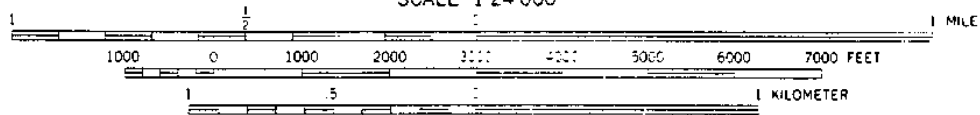
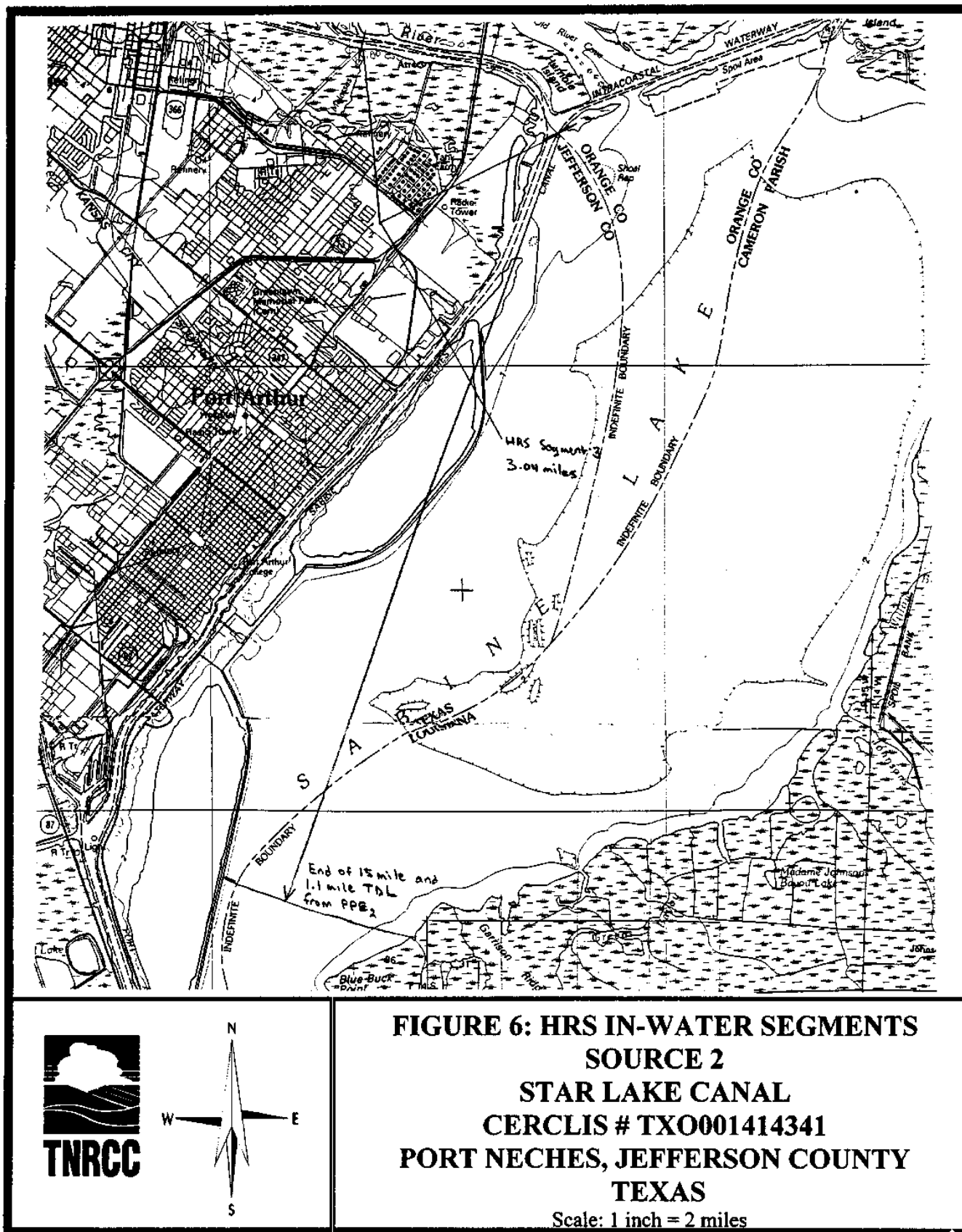


FIGURE 5: HRS IN-WATER SEGMENTS
SOURCE 2
STAR LAKE CANAL
CERCLIS # TXO001414341
PORT NECHES, JEFFERSON COUNTY
TEXAS



Nineteen sediment samples, including two field duplicates and three background samples, were collected to assess sediment contamination via transport along the surface water pathway (see Table 3 and Figure 2). Samples SE-01, SE-02 and SE-03 are background samples. Samples SE-04, SE-05 and SE-06 were target samples taken at the confluence of SLC with the Neches River. Samples SE-07, SE-08, SE-09, SE-10, SE-11, SE-12, SE-13, SE-14 and SE-15 were target samples taken along and within wetlands bordering SLC. The remaining five samples were taken in the source areas (see Waste Containment/Hazardous Substance Identification).

Table 3: Sediment Sample Locations

Sample Matrix	Sample ID#	Sample Location
Sediment	SE-01	Background sample upstream in Neches River
Sediment	SE-02	Background sample upstream in Neches River
Sediment	SE-03	Background sample upstream in Neches River
Sediment	SE-04	Target sample immediately upstream of confluence of SLC with Neches River
Sediment	SE-05	Target sample at confluence of SLC with Neches River
Sediment	SE-06	Target sample immediately downstream of confluence of SLC with Neches River
Sediment	SE-07	Target sample taken along bank of SLC
Sediment	SE-08	Target sample taken along bank of SLC
Sediment	SE-09	Target sample taken in marsh approximately 1/3 of a mile downstream of the Sara Jane Road bridge
Sediment	SE-10	Target sample taken at confluence of Molasses Bayou with SLC
Sediment	SE-11	Target sample taken in Molasses Bayou
Sediment	SE-12	Target sample taken in marsh approximately 1/8 of a mile downstream of the Sara Jane Road bridge
Sediment	SE-13	Target sample taken in SLC at the public boat ramp adjacent to Sara Jane Road
Sediment	SE-14	Duplicate sample of SE-13
Sediment	SE-15	Target sample taken in SLC immediately upstream of Sara Jane Road bridge
Sediment	SE-16	Source sample taken in Jefferson Canal
Sediment	SE-19	Source sample taken at the confluence of the Jefferson Canal with SLC
Sediment	SE-20	Source sample taken in SLC at the dam
Sediment	SE-21	Duplicate of sample of SE-20

All sediment samples were taken with a 2 foot long, stainless steel, soil coring device. In the case of samples SE-01, SE-02, SE-03, SE-04, SE-13 and SE-14, the soil coring device, and removable tip, was decontaminated (per procedures outlined in the QAPP) after each sampling location. In the case of samples SE-05, SE-06, SE-07, SE-08, SE-09, SE-10, SE-11, SE-12 and SE-15, a dedicated polyethylene zero-contamination tube was inserted into the soil coring device at each sample location. All sediment samples were placed in dedicated, decontaminated stainless steel bowls. Samples were taken from this with dedicated, decontaminated stainless steel spoons and loaded into certified clean 4 ounce glass jars with a Teflon lined lid.

The highest background and inorganic releases for sediment samples are presented in Table 4.

Table 4

Highest Background and Inorganic Releases for Sediment Samples					
CLP Traffic Report No./ Sample Location No.	% Solid	Hazardous Substance			
		Barium	Mercury	Thallium	Cyanide
Background MFGP55/SE-01	42.2	61.8	0.17	0.81U	0.59U
Background MFGP56/SE-02	73.5	0.75	18.0	0.07U	0.27U
Background MFGP57/SE-03	65.3	60.0	0.07U	0.65U	0.38U
Background Eastern US Soil Values	N/A	7.4	640	0.12	8.6
MFGP46/SE-10	39.8	94.2	0.1U	3.3	0.62U
MFGP47/SE-11	34.4	109	1.6	2.6U	4.3
MFGP48/SE-12	45.6	100	0.1U	2.1	0.54U
MFGP43/SE-13	50.1	142	0.09U	0.81	0.49U
MFGP44/SE-14 (dup. SE-13)	51.4	155	0.09U	0.64	0.49U
MFGP45/SE-15	49.2	297	0.1	2.6	0.5U
MFGP49/SE-07	48.2	114	0.1U	2.5	0.52U
MFGP50/SE-08	46.9	116	0.09U	0.93	0.53U
MFGP51/SE-09	36.4	128	0.13U	1.2	0.57U
MFGP52/SE-04	72.6	30.6	0.07U	0.27	0.34U
MFGP53/SE-05	70.9	57.1	0.06U	2.1	0.35U
CRDL mg/Kg		40	0.1	2	5

Notes:

J = The value is an estimated concentration because one or more quality control criteria have not been met.

U = Analyte concentration is undetected at the sample quantitation limit.

J! = The value is estimated and biased low.

Shaded values for samples represent releases of attributable hazardous substances.

Four target samples indicate releases of hazardous substances attributable to the site: SE-07 for thallium; SE-10 for thallium; and SE-11 for mercury and cyanide; and SE-15 for barium and thallium.

The highest background and organic releases for sediment samples is presented in Table 5.

Table 5

Highest Background and Releases for Sediment Samples				
Organics $\mu\text{g/Kg}$	FEY92 Background [SQL] SE-01	FEY83 [SQL] SE-10	FEY84 [SQL] SE-11	CRQL $\mu\text{g/Kg}$
Naphthalene	780 U		210000 [61000]	330
2-Methylnaphthalene	780 U	2300 [890]	84000 [30000]	330
Acenaphthene	780 U	2700 [890]	7000 J! [30000]	330
Fluorene	780 U	1500 [890]	61000 [30000]	330
Phenanthrene	780 U	2700 [890]		330
Pyrene	60 J [780]	1400 [890]	48000 J! [30000]	330
% Moisture	58	63	67	

Notes:

1) CRQL listed in the table are for low concentration soils.

U = Analyte concentration undetected at the reported sample quantitation limit.

[SQL] = Sample quantitation limit provided within the brackets.

J = The value is an estimated concentration because one or more quality control criteria

J1 = have not been met.
 The value is estimated and biased high.

Analytical results of two target samples (SE-10 and SE-11) indicate releases of naphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene and pyrene.

All other attribution and target samples (SE-04, SE-05, SE-06, SE-07, SE-08, SE-09, SE-12, SE-13, SE-14 and SE-15) were nondetect for the organic hazardous substances listed above.

SOIL EXPOSURE PATHWAY AND TARGETS

Characteristics

The SLC site consists of contaminated sediments at the bottom of the Star Lake and Jefferson Canals. Adjacent land is undeveloped, residential and industrial. Entry into either canal by boat from the Neches River, or the boat ramp adjacent to Sara Jane Road, is unrestricted. The SLC canal is used for recreational purposes by boaters and fishermen. Telephone conversations with TNRCC Region 10 personnel revealed that individuals occasionally swim in the canal at the Sara Jane Road boat ramp.

Soils within the study area are of the salt water marsh-Tidal marsh association, Morey-Crowley-Hockley association and the Beaumont-Morey association. Occupying approximately 3% of the county, the salt water marsh-Tidal marsh association soils are made up of boggy beds of organic material over permanently waterlogged clay, sand and shells. These areas are at or below sea level and may be covered daily by tides. The Morey-Crowley-Hockley association is nearly level and better drained than the marsh soils. Primarily, they are silty soils that occupy approximately 18% of the county. The Beaumont-Morey association is made up of clayey and silty soils that are poorly drained, occupying approximately 46% of the county (Reference 10).

Targets

No workers were documented along either canal who may come in contact with contaminated sediments. There are no schools, day care centers, parks, or other established recreational areas within 200 feet of the site. The nearest occupied residence is approximately 300 feet from the site.

The following are estimates of the number of persons living in the vicinity of SLC (Reference 11):

Zero -0.25 miles	=	0
0.25 to 0.5 miles	=	0
0.5 miles to 1 mile	=	190
1 mile to 2 miles	=	5,728

2 miles to 3 miles = 17,052
3 miles to 4 miles = 20,376

Total estimated population within 4 miles of SLC is 43,346 persons.

NOTE: The estimated population was computed by averaging the Latitude and Longitude values for either end of SLC and assuming that the center of the site is at that geographic midpoint (see Appendix E, page 2).

The soil exposure pathway was not evaluated during this SSI.

AIR PATHWAY AND TARGETS

Characteristics

No analytical data was available to document off-site migration of airborne transported hazardous substances from existing on-site sources.

Wind rose analysis indicates that the prevailing wind is from southeast (Reference 6).

No air samples were taken to assess releases to the air pathway. The site consists of canal sediments and the air pathway cannot be evaluated during this SSI.

SECTION 3 ANALYTICAL DATA ASSESSMENT

Nineteen sediment samples were collected during the Superfund Site Investigation (SSI) of the Star Lake Canal site. The samples were analyzed for Contract Laboratory Program (CLP) metals and cyanide by Analytical Resources, Inc. in Seattle, WA. Volatiles, semivolatiles and pesticides were analyzed by Compuchem in Research Triangle, NC. The resulting CLP data packages were reviewed and validated by EPA Region 6 according to the USEPA CLP Statement of Work for Inorganic Analysis (Document Number ILMO4.0), Organic Analysis (Document Number OLMO3.1), and National Functional Guidelines for Organic Data Review (EPA 1994) and Inorganic Analyses (EPA 1994). The EPA data validation reports are included in **Appendix C**.

A. Quality Assurance/Quality Control Review

In accordance with the Quality Assurance Project Plan (QAPP) for the TNRCC Preliminary Assessment/Site Inspection Program (FY 96), the TNRCC has reviewed the inorganic and organic analyses to ensure accuracy, precision, representativeness, comparability, field custody and completeness. The following is the result of that review presented as an account for the acceptance or rejection of data for its use in Superfund decision-making, including the scoring of this site.

Accuracy

For inorganics, the ICP Interference Check Samples (ICS) were analyzed at the beginning and end of each sample analysis run and no analytes were detected at levels near the interferant levels. Lab Control Samples (LCS) were conducted at adequate frequencies and the analytes had acceptable percent recoveries.

For organics, the Bromofluorobenzene (BFB) and Decafluorotriphenylphosphine (DFTPP) instrument performance checks met the ion abundance criteria.

Volatile internal standards for the samples did not vary by more than a factor of two. Most semivolatile internal standards were within criteria. One sample in SDG FEY95, sample FEY97, and one sample in SDG FEY80, sample FEY93, both had low area counts in IS6 (Perylene- d_{12}). The samples were reanalyzed resulting with slightly improved quality control. The TNRCC chooses to use reanalysis of these sample. No releases were affected.

Volatile and semivolatile surrogates recoveries were acceptable for all samples in SDG FEY95. Pesticide surrogate recoveries for a single column (Decachlorobiphenyl) in samples FEY96 and FEY97 were under 30% recovery. No qualifications were necessary and no releases were affected.

Volatile surrogate recoveries were acceptable for all samples in SDG FEY80; however,

most semivolatile surrogates for sample FEY93 were high. The TNRCC chooses to use the reanalysis of this sample. Analyte responses associated with IS6 (2,4,6-Tribromophenol) are qualified as estimated. The EPA data summary table accurately delineates the qualifications. No releases were affected.

Several pesticide samples had high recoveries in a single column for at least one surrogate response. EPA data reviewers did not qualify any data as a result of a single poor surrogate response. DDT in sample FEY84 is qualified as estimated and meets release criteria, but is estimated because of two column quantitation difference of greater than 25%.

Two of the inorganic matrix spike recoveries were outside the 75-125% control limit for SDG MFGP43; selenium and antimony. Four matrix spike recoveries were low for SDG MFGP63; selenium, antimony, thallium, and arsenic. Antimony results are not usable for either package because the concentrations are below IDL and the recovery was 19.2% reported in SDG MFGP43, and 0% reported in SDG MFGP63. Affected selenium, arsenic, and thallium results are estimated and biased low. The quality control problem is attributable to digestion effects. Several releases were affected. The EPA data summary tables associated with these SDG packages reflect the qualifications appropriately.

Spike recoveries were not analyzed for the rinsate and field blank samples in SDG FEY95. For SDG FEY80, all low level analysis spike recoveries were within limits. For medium level analysis of semivolatiles for sample FEY84, three spike recoveries were high and most duplicate spike recoveries were high. Several analytes met release criteria in this sample. The TNRCC qualified analytes acenaphthene and pyrene as estimated and biased high due to the high matrix spike recoveries and high relative percent difference.

Soil inorganic preparation blanks and calibration blanks detected concentrations of several metals. No results were affected in SDG MFGP63. In SDG MFGP43, lead and zinc rinsate sample results were affected by blank contamination. The EPA data summary tables reflect the qualifications and presents several of the results as undetected with raised sample quantitation limits (SQLs). The raised SQLs did not affect release calculations results.

The common laboratory contaminants, acetone and methylene chloride were detected in the organic method blank analyses. Additionally, in SDG FEY80 medium level analysis, the blank contained naphthalene, phenanthrene and anthracene. None of these concentrations were great enough to significantly affect the results and no qualifications were necessary. Pesticide blanks in SDG FEY80 contained delta-BHC, Heptachlor, DDE and Endrin at low levels such that no qualifications were necessary.

Precision

Two sediment samples were collected and designated appropriately as duplicates. All of the analytes detected in the duplicate pairs were within 50% relative percent difference (RPD) of each other.

Inorganic laboratory duplicates were within criteria for SDG MFGP43. In SDGP63, aluminum, arsenic, calcium, and chromium laboratory duplicate results were higher than the technical limits. The TNRCC chooses not to qualify the results based on this one quality control problem. Arsenic was already not unusable due to a low matrix spike recovery for both data packages.

A matrix spike duplicate was analyzed for each organic sample. Low level volatile, semivolatile and pesticide matrix spike duplicates were within the %RPD criteria. Medium level relative percent differences were high for acenaphthene and pyrene. Both these analytes are qualified as estimated and biased high by the TNRCC.

Nickel result for sample MFGP50 is estimated because of an inconsistent ICP replicate reading. The coefficient of variation exceeded 20 percent. No releases were affected.

Representativeness

Three equipment rinsate samples were collected of the sampling equipment used to collect the sediment samples. Equipment rinsate data results are located in SDG FEY95 and SDG MFGP43. Several analytes were detected, but at levels which did not critically affect the sample results. No qualification of the results were necessary.

Two field blanks were also collected and accompanied the equipment rinsate volatile organic samples to the laboratory. No analytes were detected in these samples.

All sediment samples were mixed in dedicated bowls and spoons. For the equipment decontamination of the dedicated bowls and spoons used at the Star Lake SSI, one equipment rinsate sample and one field blank sample were collected and analyzed for CLP metals and cyanide by Analytical Resources Inc. in Seattle, WA, and for CLP organics by ATAS in Maryland Heights, MO. The resulting data packages were reviewed and validated by EPA Region 6. The EPA data verification reports are included in **Appendix C**.

The following is a brief summary of the TNRCC review of the inorganic and organic analyses of these samples.

The analysis of the equipment rinsate sample, MFGL31, revealed detectable amounts of the following analytes:

<u>Analyte</u>	<u>Concentration</u> ($\mu\text{g/L}$)	<u>IDL</u> ($\mu\text{g/L}$)	<u>CRDL</u> ($\mu\text{g/L}$)
Calcium	115	20	5000
Chromium	5.8	5.0	10
Copper	17.9	2.0	25
Iron	41.8	20	100
Lead	3.8	1.0	3.0
Manganese	4.7	1.0	15
Sodium	404	50	5000
Zinc	10	4.0	20

The sample results for these analytes detected in the equipment rinsate sample are considered contamination introduced by the decontamination procedure. Please note that the field blank, sample MFGL32, composed of only ultra distilled water, contained calcium at 28 $\mu\text{g/L}$ and lead at 3.0 $\mu\text{g/L}$.

The contamination incurred through TNRCC decontamination procedures did not cause any concentrations of the inorganic target analytes from this site screening inspection to be disqualified as releases. The TNRCC concludes that the decontamination procedures of the bowls and spoons did not critically contribute contamination to the organic fraction of the samples.

The equipment rinsate samples FEY95, FEY96, and FEY97, had low concentrations of analytes acetone and/or phthalates and were detected at levels well below the CRQL of 10 $\mu\text{g/L}$. Since these analytes are common laboratory contaminants, they are not considered a concern by the TNRCC. DDE was detected in rinsate sample FEY95 at a low concentration, below the sample quantitation limit. This did not have any affect on the sediment samples.

Samples were collected on October 22 and 23, 1996. The laboratories received all samples by October 25, 1996. The samples were analyzed within holding time criteria. Cooler temperatures were reported at or below 4° C.

Comparability

Standard EPA methodology was conducted. ICP inorganic analyte recoveries from calibration solutions met criteria and were conducted at adequate frequencies. ICP standard calibrations for the analytes were generally acceptable. ICP serial dilutions were within 10% difference for all results.

Most organic target analytes met the percent relative standard deviation initial calibration criteria and the percent difference continuing calibration criteria. A few target analytes were outside percent difference criteria, but did not affect the data.

The instrument detection limits, the ICP interelement correction factor, and the ICP linear range requirements were met.

EPA contractual assessment of the data packages documented several contractual non-compliances. These non-compliances are listed by SDG number in the EPA data validation reports included in Appendix D. These non-compliances did not disqualify any release constituents.

Field Custody

Custody seals were all present and intact. Sample condition was reported as intact for each sample received.

Completeness

Nineteen (19) of the results were rejected; therefore, data from these packages is 99.4% complete which meets the 90% completeness objective. All acceptable CLP inorganic and organic data reported herein represent good quality data of reasonable confidence, and are suitable for use in Superfund decision-making, including the scoring of this site.

SECTION 4 FIELD AUDIT REPORT

In accordance with the QAPP for the TNRCC Preliminary Assessment/Site Inspection Program (FY 95), the TNRCC has implemented a systems audit of the TNRCC performance of the project activities and documentation during the Superfund investigation of the Star Lake Canal site. This audit includes all TNRCC site sampling activities and the quality control program of the laboratories. A completed field audit checklist is included as Appendix H.

TNRCC Site Sampling Activities

Sample collection involved obtaining nineteen sediment samples with a sediment corer during the Superfund Site Investigation (SSI) of the Star Lake Canal site. Field blanks were collected and included in each ice chest containing rinsate volatile organic analysis. The sampling team members were Daniel Benson, Wesley Newberry, Debra Hendricks and Marshall Cedilote.

Brief safety meetings were held at the start of each day of sampling for the sampling team. Each member signed and dated the briefing sheets.

Each sample was appropriately logged in the field logbook with the date, time, location, weather conditions, and identification of each sample, along with the sampler's name. All samples were preserved within thirty minutes of the time of collection.

The samples were collected using proper procedures. VOA samples were collected prior to all other chemical fractions and shielded from light immediately following collection. Disposable gloves were discarded before the next sampling event.

Samples were split with Huntsman representatives. The volatile samples for TNRCC were collected first, then the Huntsman volatiles were collected second. The other organic fractions and the metals and cyanide for TNRCC were collected. Lastly, the other organic fractions and metals and cyanide were collected for Huntsman.

TNRCC Sample Custody

Samples were properly preserved, tagged, sealed and labeled, protected from breakage, and shipped by Airborne Express within twelve hours (12) of the last sample collected. No breach of custody was noted. Traffic reports were completed with the duplicate samples designated appropriately.

The field logbook was maintained by the site investigation manager or his designee during the field investigation. Each page was initialed and/or signed by the author after each entry of each day. All entries were made in pen and field observations were

presented accurately in the field logbook, including photographs logged with the date, time, location, sample number and the photograph number, the name of person taking the picture, and the type of sample taken.

Analytical Procedures

Four data packages were reviewed and validated by EPA Region 6 according to the USEPA CLP Statement of Work for Inorganic Analysis (Document Number ILMO4.0), Organic Analysis (Document Number OLMO3.1), and National Functional Guidelines for Organic Data Review (EPA 1994) and Inorganic Analyses (EPA 1994). The EPA data validation reports are included in **Appendix C**. All data packages were considered by EPA to be technically provisional.

Appropriate analytical procedures were conducted. Some of the data was qualified as estimated, "J", or as unusable, "R" for Superfund purposes due to quality control criteria failures by the laboratory. The accuracy and completeness of the data associated with this project may be used with reasonable confidence to determine the score and/or current status of the Star Lake Canal site investigated by the TNRCC.

Audit Close-Out

In accordance with the Quality Assurance Project Plan (QAPP) for the TNRCC Preliminary Assessment/Site Inspection Program (FY 95), the TNRCC has completed the systems audit of the TNRCC performance of the project activities and documentation during the Superfund investigation of the Star Lake Canal site. No further action by the Technical Director, Program Manager, or Site Investigation Manager is necessary to assure the quality, controllability, accountability, and traceability of the work performed during this Superfund investigation within the TNRCC PA/SI Program.

SECTION 5 CONCLUSIONS

The surface water pathway has been evaluated for contaminant migration from the Star Lake Canal (SLC) site. Complete analytical results are given in Appendix C.

The hazardous substances attributable to this site are acenaphthene, acenaphthylene, anthracene, arsenic, barium, benzo(b)fluoranthene, benzo(k)fluoranthene, cyanide, fluoranthene, fluorene, mercury, 2-methylnaphthalene, naphthalene, PCB (aroclor-1254), phenanthrene, pyrene, and thallium (see Table 1).

A total of nineteen (19) sediment samples collected at this site. Based upon analyses of the samples collected, twelve (12) organic and five (5) inorganic hazardous substances were detected in source sediment samples (SE-16, SE-19, SE-20 and SE-21). Releases of six (6) organic and four (4) inorganic hazardous substances were detected in target samples (SE-05, SE-07, SE-10 and SE-11). Wetlands border both source and contaminated target areas.

The SLC is approximately 2 miles long and empties directly into the Neches River in Port Neches, Jefferson County, Texas. The groundwater, soil exposure and air pathways for this site are inactive.

A sampling inspection by the TDWR in March, 1983, documented the presence of hazardous substances in material dredged from the banks of the Jefferson Canal. This canal was used by local chemical companies as an outfall for stormwater and wastewater for more than 50 years. The Jefferson Canal confluent with SLC in an area between State Highway 366 and Sara Jane Road, a.k.a. East Port Neches Avenue. TNRCC files note that wastewater has been discharged to the Jefferson Canal in violation of the Texas Water Code. TNRCC Region 10 Environmental Assessment Program sampling results document the presence of metals in the SLC at a point 0.25 miles upstream of its confluence with the Neches River.

A search of the Texas Biological and Conservation Data System revealed the presence of sensitive species and natural communities within a 4 mile radius of the site.

REFERENCE LISTING

1. US Environmental Protection Agency. Guidance for Performing Site inspections Under CERCLA, Office of Emergency and Remedial Response, Hazardous Site Evaluation Division, Publication 9345.1-05, September, 1992. 125 pages.
2. US Environmental Protection Agency. 1993 Superfund Chemical Data Matrix (SCDM). March, 1993.
3. TNRCC file information, 98 pages. Included as Appendix D.
4. Texas Department of Water Resources. Report 236. Stratigraphic and Hydrogeologic Framework of Part of the Coastal Plain of Texas. July, 1979.
5. Texas Natural Resource Conservation Commission. The State of Texas Water Quality Inventory, Volume 2. 1994.
6. Texas Department of Water Resources. Climatic Atlas of Texas. December, 1983.
7. Texas Parks and Wildlife Department correspondence. October 10, 1996. Included as Appendix E.
8. United States Department of Agriculture Soil Conservation Service. Soil Survey Jefferson County, Texas. February, 1965.
9. National Wetland Inventory Map, Port Arthur North Quadrangle. 1995. Included as Appendix I.
10. Texas Parks and Wildlife Department, Fisheries and Wildlife Division. Trends in Finfish Landings and Social and Economic Characteristics of Sport-Boat Fishermen in Texas Marine Waters, May 1974-May 1989. Management Data Series, No. 56, 1991.
11. TNRCC Interoffice Memorandum: Population Around Star Lake Canal, Jefferson County, Texas. September 16, 1996. Included as Appendix F.

APPENDIX A



Photo 1 (Facing West) Date: 10/22/96 Photographer: Marshall Cedilote
Equipment decontamination prior to sampling.



Photo 2 (Facing South) Date: 10/22/96 Photographer: Daniel Benson
SE-1(background) sample location on the Neches River.



Photo 3 (Facing South) Date: 10/22/96 Photographer: Daniel Benson
SE-2 (background) sample location on Neches River.



Photo 5 (Facing Southeast) Date: 10/22/96 Photographer: Daniel Benson
SE-3 (background) sample location on Neches River.



Photo 6 (Facing North) Date: 10/22/96 Photographer: Daniel Benson
SE-4 sample location on Neches River upstream of confluence with Star Lake Canal.



Photo 7 (Facing East) Date: 10/22/96 Photographer: Daniel Benson
SE-13 sample location at boat ramp in Star Lake Canal at Sara Jane Road.



Photo 8 (Facing East) Date: 10/22/96 Photographer: Daniel Benson
SE-14 sample location (duplicate of SE-13).

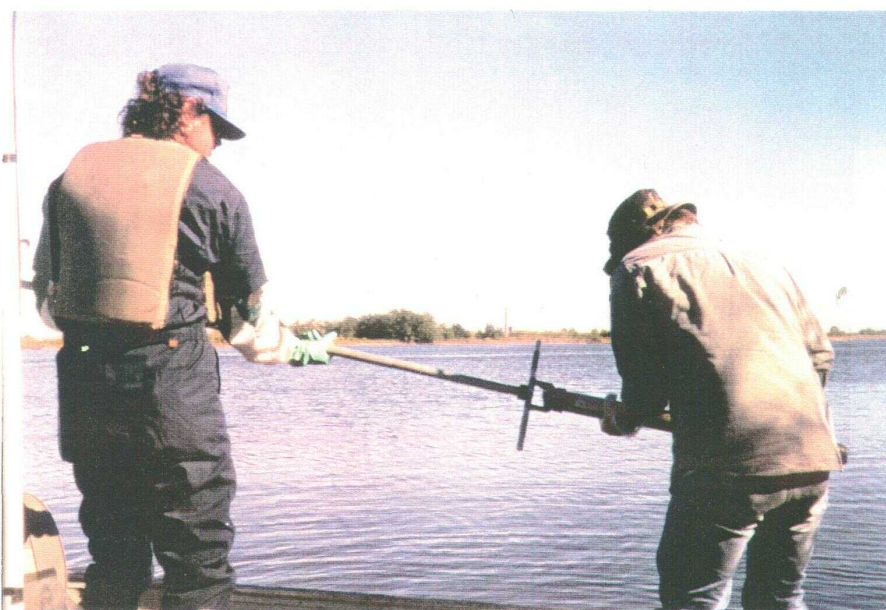


Photo 9 (Facing Northeast) Date: 10/23/96 Photographer: Daniel Benson
SE-5 sample location at confluence of Star Lake Canal with Neches River.



Photo 10 (Facing North) Date: 10/23/96 Photographer: Daniel Benson
SE-6 sample location downstream of Star Lake Canal's confluence with Neches River.

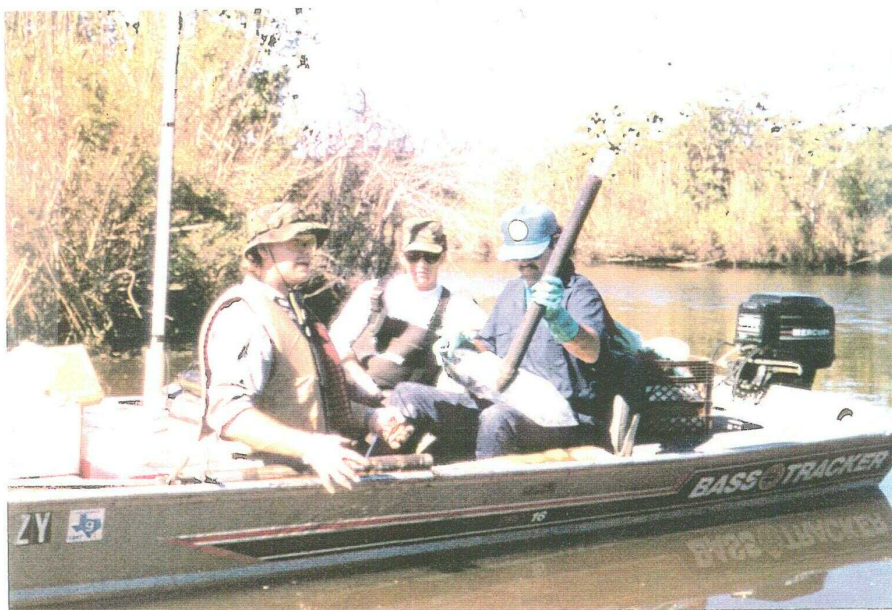


Photo 11 (Facing Northwest) Date: 10/23/96 Photographer: Daniel Benson
SE-7 sample location in Star Lake Canal.



Photo 12 (Facing Southeast) Date: 10/23/96 Photographer: Daniel Benson
SE-8 sample location in Star Lake Canal.



Photo 13 (Facing Southeast) Date: 10/23/96 Photographer: Daniel Benson
SE-9 sample location in marsh adjacent to Star Lake Canal.



Photo 14 (Facing Northwest) Date: 10/23/96 Photographer: Daniel Benson
Documentation that sport fishermen use areas adjacent to Star Lake Canal.



Photo 15 (Facing South) Date: 10/23/96 Photographer: Daniel Benson
SE-20 and SE-21 sample locations upstream in Star Lake Canal.

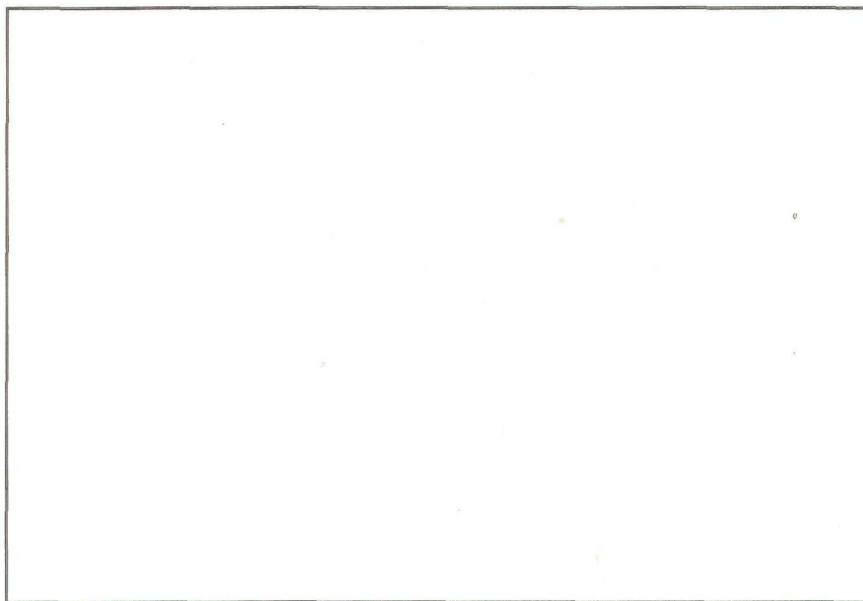


Photo 16 (Facing South) Date: 10/23/96 Photographer: Daniel Benson
SE-19 sample location at confluence of Jefferson Canal with Star Lake Canal.
NOTE: This photo was overexposed and is therefore unavailable.



Photo 17 (Facing North) Date: 10/23/96 Photographer: Daniel Benson
SE-16 sample location upstream in Jefferson Canal.



Photo18 (Facing West) Date: 10/23/96 Photographer: Daniel Benson
SE-15 sample location in Star Lake Canal upstream of Sara Jane Road bridge.



Photo 20 (Facing East) Date: 10/23/96 Photographer: Daniel Benson
SE-11 sample location in Molasses Bayou adjacent to Star Lake Canal.



Photo 21 (Facing Southwest) Date: 10/23/96 Photographer: Daniel Benson
SE-10 sample location in Molasses Bayou adjacent to Star Lake Canal.



Photo 22 (Facing Southwest) Date: 10/23/96 Photographer: Daniel Benson
SE-12 sample location in marsh adjacent to Star Lake Canal.

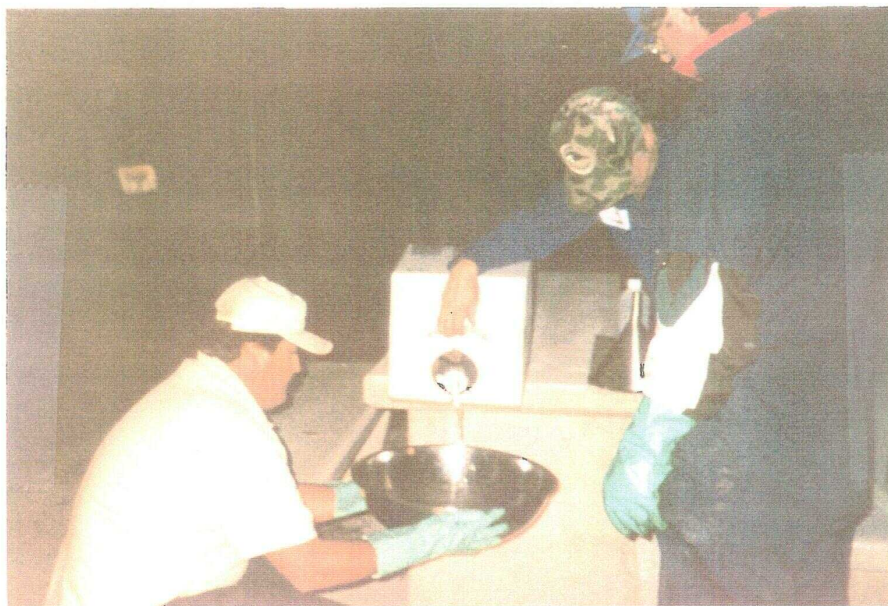


Photo 23 (Facing West) Date: 10/23/96 Photographer: Marshall Cedilote
Decontamination of equipment.

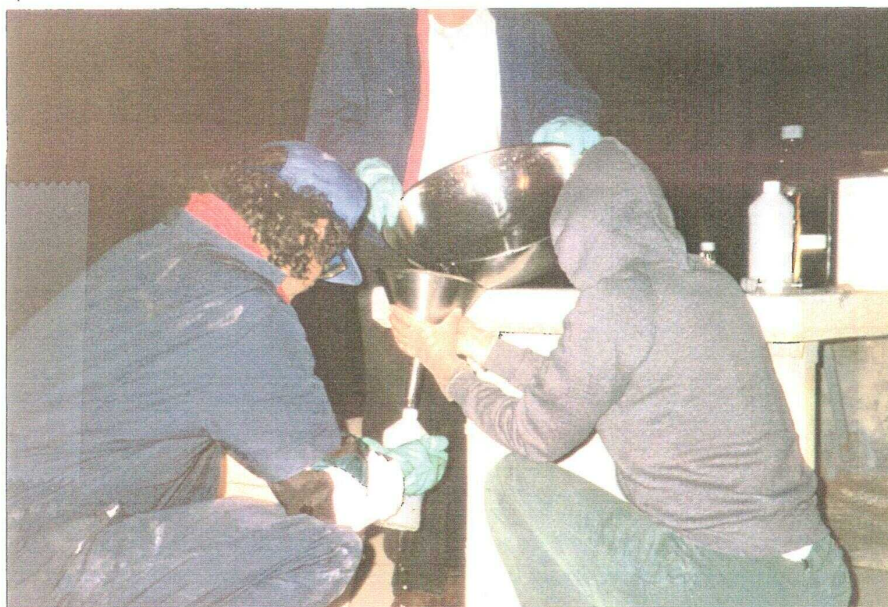


Photo 24 (Facing West) Date: 10/23/96 Photographer: Marshall Cedilote
Taking sample ER-3 (equipment rinsate).



Photo 25 (Facing West) Date: 10/23/96 Photographer: Marshall Cedilote
Taking sample FB-2 (field blank).

APPENDIX B

Table 2. Proposed Samples to be Collected

Sample Matrix	Sample ID	Sample Location	Rationale
Sediment	SE-1	Sediment sample on northern side of the Neches River in shallow marshland (Figure 2).	Background sample
	SE-2	Sediment sample on northern side of the Neches River in shallow marshland (Figure 2).	Background sample
	SE-3	Sediment sample on northern side of the Neches River in shallow marshland (Figure 2).	Background sample
	SE-4	Sediment sample west of confluence of SLC with the Neches River (Figure 3).	Target sample downstream in TDI to assess and characterize any contamination of the Neches River fishery.
	SE-5	Sediment sample at confluence of SLC and the Neches River (Figure 3).	Target sample downstream in TDI to assess and characterize any contamination of the Neches River fishery.
	SE-6	Sediment sample east of confluence of SLC with the Neches River (Figure 3).	Target sample downstream in TDI to assess and characterize any contamination of the Neches River fishery.
	SE-7	Sediment sample in SLC adjacent to wetlands (Figure 3).	Target sample to assess and characterize any contamination in wetland area.
	SE-8	Sediment sample in SLC adjacent to wetlands (Figure 3).	Target sample to assess and characterize any contamination in wetland area.
	SE-9	Sediment sample in wetlands area (Figure 3). This sample location may be moved if this area is inaccessible by boat during the SSI.	Target sample to assess and characterize any contamination in wetland area.
	SE-10	Sediment sample in left prong of Molasses Bayou (Figure 3).	Target sample to assess and characterize any contamination in wetland area.
	SE-11	Sediment sample in left prong of Molasses Bayou (Figure 3).	Target sample to assess and characterize any contamination in wetland area.
	SE-12	Sediment sample southeast of boat ramp in marshland (Figure 3).	Target sample to assess and characterize any contamination in wetland area.

Sample Matrix	Sample ID	Sample Location	Rationale
Sediment	SE-13	Sediment sample taken at boat ramp (Figure 3).	Target sample at PPE
	SE-14	Sediment sample taken at boat ramp (Figure 3). This is not a duplicate of SE-13	Target sample at PPE
	SE-15	Sediment source sample in SLC (Figure 3).	Delineate and characterize source.
	SE-16	Sediment source sample in Jefferson Canal (Figure 3)	Delineate and characterize source.
	SE-17	Sediment source sample from headwaters of Jefferson Canal (Figure 3).	Delineate and characterize source.
	SE-18	QA/QC	Duplicate sample taken at same location as SE-17.
	SE-19	Sediment source sample in SLC (Figure 3).	Delineate and characterize source.
	SE-20	Sediment source sample at dam across SLC (Figure 3).	Delineate and characterize source.
	SE-21	QA/QC	Duplicate sample taken at same location as SE-20
Rinsate	R-1	Rinsate sample from Eckman dredge and core sampler prior to Day 1 of sediment sampling.	QA/QC
	R-2	Rinsate sample from Eckman dredge and core sampler after to Day 1 of sediment sampling.	QA/QC
	R-3	Rinsate sample from Eckman dredge and core sampler after Day 2 of sediment sampling.	QA/QC
	FB-1	Field blank collected at same time as R-1.	QA/QC
	FB-2	Field blank collected at same time as R-3.	QA/QC

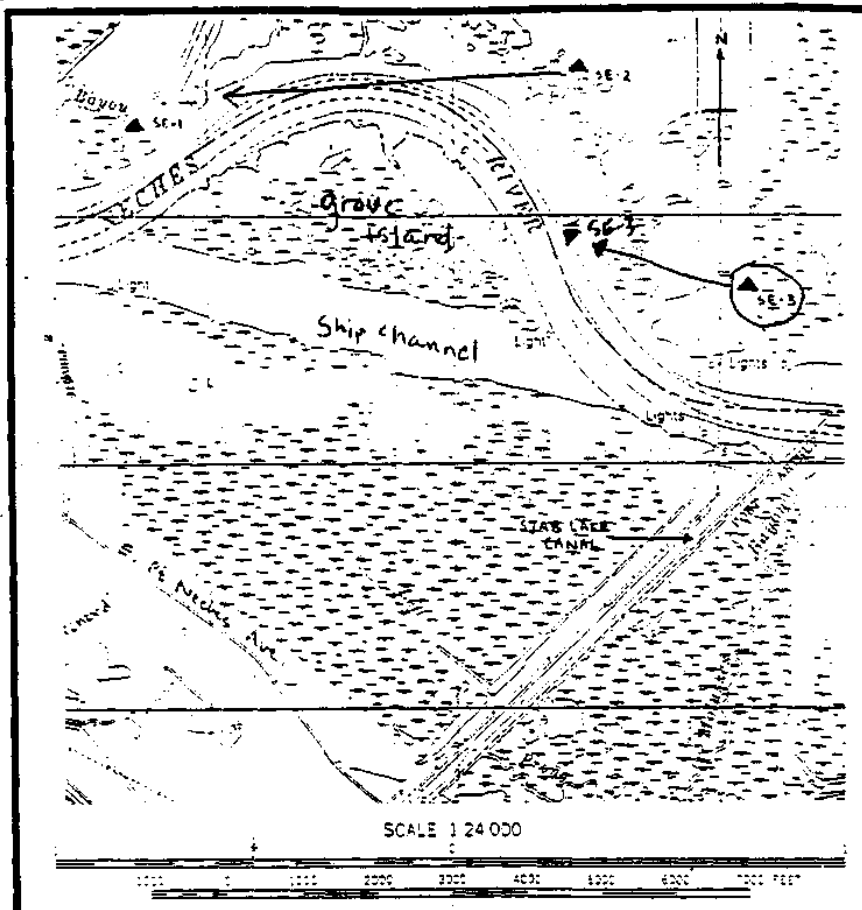
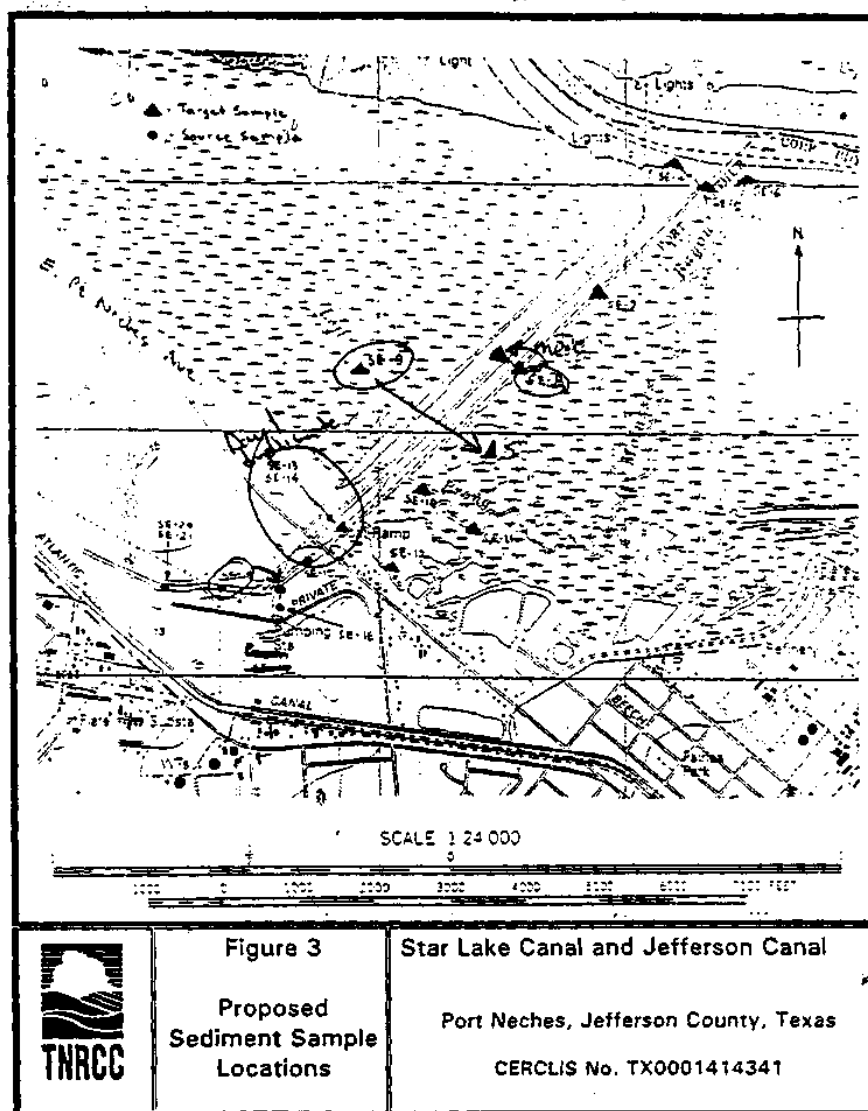


Figure 2
Proposed
Background
Sample Locations

Star Lake Canal and Jefferson Canal

Port Neches, Jefferson County, Texas

CERCLIS No. TX0001414341



6

Contacts:

Tim Proznik 409 723-3431

Greg Conley 409 898-3838 Mobil 409 782-2842

Marshall Cullen 10/22/96

7

10/22/96

Arrived at site at 7:35 AM

Met Tim Prosznik - Huntsman

Daniel Benson conducted safety briefing

Marty Briggs - Huntsman arrived 7:50 AM

Began setting up derrick for core sampler

Wes and Deanna left site @ 8:25 for wal mart for bottle brush

Will get zero-contamination tubes sent from Austin by bus

Greg Leaky arrived 8:25

Debra and Daniel verified that OVA worked and was calibrated

9:13 AM - Began taking rinsate and field blank samples

Left Huntsman boat ramp at 10:15 AM

10:37 Arrived at SE-01 sample location - directly across from O:O plant dock. This is a background sample on Neches River (Ship Channel)
Gray clay, organic matter, slight odor, extremely wet clay

Photo #1 by D. Benson looking South at SE-1 sample location.

(Sample taken by Debra Hendricks) across Neches River

(at 10:40 a.m.) M. Ceditate used core sampler and Debra mixed composite

Sample depth approx 1' below water surface

Weather is cool 68°F, cloudy with no sun. Wind out of the NW at about 15-20 mph

Star is splitting samples w/ TRCC using their own containers. (for SE-1)

11:00 Arrive at SE-2 location approx. 200 yards ^{North} from confluence of ship channel and Neches River. Depth of sample approx 1.5' below water surface

Photo #3 by D. Benson looking south across Neches River toward ship channel. View of sediment sample location SE-2 -

GPS File R102322A

N 29° 59' 38.6" W 93° 55' 30.8"

Sample is dark black/gray clay, silty sand ^{mixed in} - organic matter (roots), wet, slight green

Sample by D. Hendricks at 11:15 a.m. - Star did not split SE-2.

All samples taken today will utilize dedicated spinnabowls from Decovent #10

Daniel Benson 10/22/96

8

Marshall C. Caldwell 10/22/96

10/22/96

11:42 Arrived at SE-Location SE-3. Depth of sample approx 2' below water surface. We are downstream from SE at Neches River & Ship Channel West bank of Old Neches River. Bottom is very sandy and sample retrieval is difficult (low recovery). Moving out from bank approx 15' no luck - trying North Bank. Photo #4 SE-3 looking South toward Ship Channel. Photo by D. Benson. D. Hendricks mixed composite sample and filled jars once we got to North bank and recovered SE-3. Star did not split sample. Weather is still cool, no rain yet although it was raining earlier, no Sun. Wind out of NW.

12:31 SE-4 location is on upstream side of outfall at Canal and Neches River intersection (approx 30 yds from canal). See page 31 for additional information. Photo #6 by D. Benson looking North at SE-4 location. Star is splitting this sample with us.

2:35 SE-13, SE-14 sediment samples taken approx 40' downstream from E. Ft. Neches Avenue bridge and near the public boat ramp. SE-14 is field duplicate of SE-13. Photograph 7 by D. Benson facing East looking at SE-13 sample location. Recovery of this sample was difficult. Black stiff clay - all the way.

Work plan modified as follows: 13 and 14 were taken on afternoon of 10/22/96. SE-14 is a duplicate of SE-13.

Finished work at site at 5:00 PM

Loaded sample coolers into truck

Dropped off at Archerne Express at 5:30 PM

Marshall Caldwell
10/22/96

Daniel Benson 10/24/96

Marshall Coblitz 10/23/96

9

10/23/96

Arrived at site 7:35 AM

Greg Conley, Tim Praznik, Marty Briggs already here

Daniel Benson conducted safety briefing

Wes Newberry and Greg Conley took boat to get

GIS coordinates for SE-1, SE-2, SE-3, SE-4

Dianne Epperson called Sample management office to

advise of samples shipped on 10/22/96

Setup decan area under pavillion

Setup decan area on pier

Back Cuñillas (EPA) arrived ~ 8:10 AM

left Huntsman boat ramp about 9:30 am

10 cc 10/23/96

GPS INFORMATION AS PROVIDED BY TNRCC Greg Conley

SE-5 Sample location FILE# R102315A

Position: N 29° 58' 58.11" W 93° 53' 54.44" - This is a corrected position.

This sample location is on the ^(downstream side) south bank of star canal at junction with (OH) Neches River (ship channel). SE-5 is first sed. sample collected today

Star will split samples with TNRCC.

Weather today is clear, sunny, breezy - winds out of north at 10-15 mph

Temperature is about 63°F.

1

Once env sample was obtained, the zinc contamination tube was removed.

A sterile nitrile glove was used along with a push rod to extract the sample from tube. Sample recovery was then mixed in dedicated spoon & bowl from decan event #10.

11:35 Sample location SE-06 - arrived at location - GPS information

File# R102315B N 29° 58' 58.04" 93° 53' 47.18" (corrected)

Sample location is approx. 300' downstream of outfall of Star Canal and Neches River - collected on the Neches.

Star split Sample w/ TNRCC

See sample notes p. 33

Daniel Benson 10/23/96

10

Marshall Leblond 10/23/96

11:00 am 10/23/96

File # ~~R102316A~~^{DB} N 29° 58' 46.51" W 93° 54' 06.06" corrected
 SE-07 arrived correct coordinates

400 yds upstreams from Star cut fall and Neches River intersection
 Star is splitting this sample w/ TURCC
 See sample notes p.34

Weather: still ~~was~~^{Sunny} and breezy, warming up to about 70°F
 clear skies.

10/23/96 11:35 SE-08 File # 102316B N 29° 58' 43.70" W 93° 54' 13.21" ^{corrected position 12.46"}
^{DB}

Approx 200 yds upstream from SE-7 on star lake canal (north bank)
 Canal ^{water level} was ^(lowered) flushed to a small degree following the passage of a
 large sea going vessel (tanker ship). Water level returned a few minutes
 later. Star is splitting samples with TURCC.
 See page 35 for additional information

10/23/96 12:20 pm SE-9 location is on pond area approximately 200' ^{east db} (south) of Star
 canal File # R102317A N 29° 58' 24.99" W 93° 54' 29.59"
 (corrected position)

Sample location is east of star canal in tidal flat marsh area

All samples ^{collected today} were mixed in dedicated spans and bowls from decan bucket #10

10/23/96 2:20 File # ~~R102319A~~^{DB} R102319B N 29° 58' 02.89" W 93° 55' 13.74" ^{corrected position}

Arrived at SE 20/21 sample location approx 200' feet downstream of
 dam on Star Lake Canal and upstream of Grossie road bridge (burned out)
 1st attempt at coring was not good enough to recover enough sample
 material. Moved downstream another 100'

^{DB}
 OVA reading 2:30 is 1.2 ppm
 Will have to collect at least 5 core tubes to have enough sample to recover

Marshall Lehto

10/23/96

11

10/23/96

SE-21 is duplicate of SE-20 taken at same location
- approx 50' West of Old Crossie Road Bridge
These are Source Samples.

Weather - has warmed to about 78°F, clear and sunny, wind has died down to < 5 mph. Slight breeze only. Warm now.

10/23/96 3:30 pm GPS: File # R102320A ^{corrected position} N 29°58'4.07" W 93°54'58.28"
SE-19 sample location is East bank of Star Canal approx. 200' N
of County Pump station on Star Canal ⁽¹¹⁷⁾ near Jefferson Canal intersection
DVA reading 0.4 ppm

10/23/96 3:50 pm SE-16 Sample Location ^{corrected position} GPS File # R10232B N 29°58'03.21" N
Approx. 50' South of SE-19 - on Jefferson Canal 93°54'59.45" W
right before confluence of Star Lake Canal - down from pump station.

10/23/96 4:05 M. Cedilite indicated SE-17, SE-18 will not be collected
due to inaccessability

10/23/96 4:20 SE-15 ^{file #} ^{date} ^{location} : GPS R102321A N 29°58'40.9.12"
W 93°54'52.61"
Approx 50' South of Pt Neches Road Bridge on Star Canal
Star is splitting sample.

10/23/96 5:40 Arrived at SE-11 GPS File # R102322B ^{N 29°58'16.63"}
^{W 93°54'36.74"}
We are approx 75 yds upstream on ^{left bank of} Molasses Bayou - upstream of intersection
of Molasses and Star Canal.

Weather: cooler, sun going down, winds back up around 10-15 mph

Daniel Pearson 10/23/96

12

Marshall Coblentz 10/23/96

20.33" corrected position DRB 37.63"

10/23/96 SE-10 - GPS File # R102323A N 29° 58' 18.73" W 93° 54' 38.81" DRB

Arrived at 6:00 pm to SE-10 location at confluence of left prong of Molasses Bayou and Star Lake Canal. We are downstream of SE-11 by about 60 yards.

Sample SE-10 has heavy odor w/ sheen like appearance.

We are in vicinity of a sunken boat which is approx. 20 feet south of sample location.

10/23/96 SE-11 GPS File # R102323B N 29° 58' 11.47" W 93° 54' 40.39"

Arrived at 6:25 pm. Sun is going down, it's getting cold.

We are approx. 100 yds east of Star Canal in tributary draining to the canal. - On private property

File #

SE-13

102303C

(Correction)

N 29° 58' 10.17"

W 93° 54' 52.51"

Decommed equipment

Took replicate sample and Field Blanks

Cleaned up site

Left Huntsman property at 7:45 PM

Arrived back at hotel 8:00 PM

Marshall Coblentz
10/23/96

105

Marshall A. McIntire
10/23/96

14

Marshall B. Hall
12/25/96

15

Marshall B. White
2/2/96

16

Shirley L. Co. Wm
10/23/92

Alcohol 11
10/21/06

18

Marshall Collet =
10/23/46

Marshall Richman
10/23/06

Handwritten note:
Marshall C. C. C.
10/23/66

21

PHOT

Michael Roth
10/23/96

22

Roll #1	Subject	Direction	Time/ Date	Photographer
1	Equipment decon	W	10/22 8:15	Cedilote
2	SE-1	S	10/22 10:37	D. Benson
3	SE-2	S	10/22 11:10	D. Benson
4	SE-3 (1st try - West bank) <i>South</i>	S	10/22 11:42	D. Benson
5	SE-3 North bank old meanders River	SE	10/22 12:00	D. Benson
6	SE-4 Upstream <i>on Naches River</i> at <i>land out fall</i>	N	10/22 12:33	D. Benson
7	SE-13	E	10/22 2:35	D. Benson
8	SE-14	E	10/22 2:45	D. Benson
9	SE-5	NE	10/23 10:10	D. Benson
10	SE-6	N	10/23 10:45	D. Benson
11	SE-7	NW	10/23 11:05	D. Benson
12	SE-8	SE	10/23 11:40	D. Benson
13	SE-9 <i>Firma in background</i> <i>Refinery Bridge</i>	SE	10/23 12:00	D. Benson
14	From SE-9 location - <i>documenting</i> <i>fisherman</i>	NW	10/23 12:30	D. Benson
15	SE-20-21	S	10/23 2:30	D. Benson
16	SE-19	S	10/23 2:38	D. Benson
17	SE-16	N	10/23 4:00	D. Benson
18	SE-15	W	10/23 4:20	D. Benson
19	Project Manager	S	10/23 5:00	D. Benson
20	SE-11	E	10/23 5:40	D. Benson
21	SE-10 <i>man</i>	SW	10/23 6:05	D. Benson
22	SE-11/12	SW	10/23 6:25	D. Benson
23	Decon of equipment	W	10/23 7:15	M. Cedilote
24	Taking sample <i>ER-2</i>	W	10/23 7:25	M. Cedilote
25	Taking <i>ER-2</i>	W	10/23 7:26	M. Cedilote

Daniel Benson 10/23/96
 Daniel Benson 10/23/96

24

Roll #3

Subject

Direction

Time/
Date

Photographer

Re

Marshall Islands
10/25/46

Roll #	Subject	Direction	Time/Date	Photographer
				25

Standard Cell
11/23/66

26

Marshall Bush
10/29/96

27

Marshall Field
14/23/96

500-0320

Background

Star Lake Outfall Canal

Case #25093

Station No. SE-01

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEY92	6-016659
VOA	FEY92	6-016660
EXT	FEY92	6-016661
EXT	FEY92	6-016662
TM	MEGP55	6-016663
CYN	MEGP55	6-016664

10/22/96 Sampled at 10:40 - background sample SE-01 directly across
from C&O plant dock (Texaco) - on the Neches River

See page 7 for additional Sampling information.

Sampled by D. Hendricks

Daniel Benson 10/22/96

Background

Star Lake Outfall Canal

Case #25093

Station No. SE-02

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	<u>FEY93</u>	<u>6-016665</u>
VOA	<u>FEY93</u>	<u>6-016666</u>
EXT	<u>FEY93</u>	<u>6-016667</u>
EXT	<u>FEY93</u>	<u>6-016668</u>
TM	<u>MFGP56</u>	<u>6-016669</u>
CYN	<u>MFGP56</u>	<u>6-016670</u>

10/22/96 Sed. Sample SE-02 taken at 11:15 am by D. Hendricks
SE-2 is background obtained approx. 200 yds north of SE-1
on Old Neches River.

See page 7 for additional sampling information.

Daniel Benson 10/22/96

Background

Star Lake Outfall Canal

Case #25093

Station No. SE-03

	SAMPLE ID #	C.O.C. #
VOA	FEY94	6-016671
VOA	FEY94	6-016672
EXT	FEY94	6-016673
EXT	FEY94	6-016674
TM	MFGP57	6-016675
CYN	MFGP57	6-016676

10/22/96 12:00pm SE-3 taken from North Bank of Old Naches - because we got no recovery at location described on Pg 8, we moved across Old Naches to north bank. D. Hendrix mixed composite and filled jars

Sample is dark black clay, wet, and sticky.

Taken at 12:05pm This is another background sample

Sample depth approx 2' below water surface

Daniel Benson, 10/22/96

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFPG61

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFPG43

Matrix (soil/water): SOIL

Lab Sample ID: 5368S

Level (low/med): LOW

Date Received: 10/25/96

Solids: 45.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	28800	—	—	P
7440-36-0	Antimony	21.6	U	N	P
7440-38-2	Arsenic	1.9	B	—	F
7440-39-3	Barium	179	—	—	P
7440-41-7	Beryllium	1.5	B	—	P
7440-43-9	Cadmium	0.86	U	—	P
7440-70-2	Calcium	24700	—	—	P
7440-47-3	Chromium	46.0	—	—	P
7440-48-4	Cobalt	6.3	B	—	P
7440-50-8	Copper	67.1	—	—	P
7439-89-6	Iron	17300	—	—	P
7439-92-1	Lead	63.5	—	—	F
7439-95-4	Magnesium	6400	—	—	P
7439-96-5	Manganese	181	—	—	P
7439-97-6	Mercury	0.76	—	—	CV
7440-02-0	Nickel	15.2	B	—	P
7440-09-7	Potassium	3390	—	—	P
7782-49-2	Selenium	2.1	U	N	F
7440-22-4	Silver	1.3	U	—	P
7440-23-5	Sodium	3100	—	—	P
7440-28-0	Thallium	2.1	U	—	F
7440-62-2	Vanadium	47.8	—	—	P
7440-66-6	Zinc	93.4	—	—	P
	Cyanide	0.55	U	—	CA

Color Before: BROWN

Clarity Before: —

Texture: FINE

Color After: GREEN

Clarity After: CLOUDY

Artifacts: —

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP62

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368T

Level (low/med): LOW Date Received: 10/25/96

% Solids: 59.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23200	U		P
7440-36-0	Antimony	15.8	U	N	P
7440-38-2	Arsenic	21.0			F
7440-39-3	Barium	436			P
7440-41-7	Beryllium	1.8			P
7440-43-9	Cadmium	0.63	U		P
7440-70-2	Calcium	13700			P
7440-47-3	Chromium	29.7			P
7440-48-4	Cobalt	15.1	B		P
7440-50-8	Copper	16.1			P
7439-89-6	Iron	35200			P
7439-92-1	Lead	31.6			F
7439-95-4	Magnesium	3500			P
7439-96-5	Manganese	491			P
7439-97-6	Mercury	0.08	U		CV
7440-02-0	Nickel	18.3			P
7440-09-7	Potassium	3240			P
7782-49-2	Selenium	0.33	U	WN	F
7440-22-4	Silver	0.95	U		P
7440-23-5	Sodium	1700			P
7440-28-0	Thallium	3.3	B		F
7440-62-2	Vanadium	71.1			P
7440-66-6	Zinc	40.8			P
	Cyanide	0.42	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

ILM04.0

000026



United States Environmental Protection Agency
Contract Laboratory Program

**Organic Traffic Report
& Chain of Custody Record**
(For Organic CLP Analysis)

Case No.

25093

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		6	TURCO	10/24/96	AIRBORNE EXPRESS	1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	1. HCl 2. HNO ₃ 3. NaHSO ₄ 4. H ₂ SO ₄ 5. Ice only 6. Other (Specify in Column D) N. Not preserved
Regional Information		3. Sampler (Name)		Airbill Number			
		Wesley Newberry		86244550870			
Non-Superfund Program		3. Sampler Signature		5. Ship To			
		<i>[Signature]</i>		COMPOCHEM			
Site Name		3. Purpose		1600 SILICON DRIVE			
STAR LAKE CANAL		Early Action: <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> RI <input type="checkbox"/> SI <input type="checkbox"/> ESI <input checked="" type="checkbox"/> SF <input type="checkbox"/> PRP <input type="checkbox"/> ST <input type="checkbox"/> FED		RESEARCH TRIANGLE NC 27709			
City, State		Site Spill ID		LATIN BOB MEIERER			
R. McLean TX							

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7)	E RAS Analysis	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier
FE201	5	LOW	GRAB	5	X X X	6-017349-52	SE-19	10/23/96 15:30	MF6P61	WN	
FE202	5	LOW	GRAB	5	X X X	6-017279-52	SE-15	10/23/96 16:30	MF6P45	WN	
FE203	5	LOW	GRAB	5	X X X	6-017285-58	SE-16	10/23/96 15:30	MF6P40	WN	
FE204	5	LOW	GRAB	5	X X X	6-017285-58	SE-20	10/23/96 14:30	MF6P62	WN	
FE205	5	LOW	COMP	5	X X X	6-017361-64	SE-52	10/23/96 14:40	MF6P63	WN	
FE206	4	LOW	GRAB	5	X	6-016650-31	ER-03	10/23/96 19:25	MF6P60	WN	R
FE207	4	LOW	GRAB	5	X	6-016657-58	FE302	10/23/96 19:26		WN	B
FE208	5	LOW	COMP	5	X X X	6-017355-58	SE-20	10/23/96 14:30	MF6P62	WN	

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>[Signature]</i>	10/24/96 8:00 AM				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

DISTRIBUTION: Blue - Region Copy
White - Lab Copy for Return to Region

Pink - CLASS Copy
Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

365580



Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

Case No.

25093

1. Project Code		Account Code		2. Region No.		Sampling Co.		4. Date Shipped		Carrier		6. Matrix (Enter in Column A)		7. Preservative (Enter in Column D)					
				6		TNRCC		10/24/96		AIRBORNE EXPRESS		1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)		1. HCl 2. HNO ₃ 3. NaHSO ₄ 4. H ₂ SO ₄ 5. Ice only 6. Other (Specify in Column D) N. Not preserved					
Regional Information				Sampler (Name) WES NEWBERRY				Airbill Number 862-445-0973											
Non-Superfund Program				Sampler Signature <i>[Signature]</i>				Ship To COMPUCHEM											
Site Name STAR LAKE CANAL				3. Purpose*				4600 SILICON DRIVE RESEARCH TRIANGLE NC 27709											
City, State Ft Worth TX		Site Spill ID D		Lead		Early Action		Long-Term Action											
				<input checked="" type="checkbox"/> SF <input type="checkbox"/> PAP <input type="checkbox"/> ST <input type="checkbox"/> FED		<input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> RI <input checked="" type="checkbox"/> SI <input type="checkbox"/> ESI		<input type="checkbox"/> FS <input type="checkbox"/> RD <input type="checkbox"/> RA <input type="checkbox"/> O&M <input type="checkbox"/> NPLD											
CIP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc Low Med High	C Sample Type: Comp Grab	D Preservative (from Box 7) Other:	E RAS Analysis	F High only ARO TOX	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier								
FEY87	5	LOW	GRAB	5	X X X		SE 08	10/23/96 11:40	MFGP50	MC									
FEY90	5	LOW	GRAB	5	X X X		SE 05	10/23/96 10:10	MFGP53	WN									
FEY91	5	LOW	GRAB	5	X X X		SE 06	10/23/96 10:40	MFGP54	WN									
FEY91	5	LOW	GRAB	5	X X X		SE 06	10/23/96 10:40	MFGP54	WN									
FEY96	5	LOW	GRAB	5	X X X		SE 07	10/23/96 11:05	MFGP49	WN									
FEY98	5	LOW	GRAB	5	X X X		SE 09	10/23/96 12:20	MFGP51	MC									
Shipment for Case Complete? (Y/N)												Page		Sample(s) to be Used for Laboratory OC		Additional Sampler Signatures		Chain of Custody Seal Number(s)	

CHAIN OF CUSTODY, RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>Michael L. Ceballos</i>	10/14/96 8:00 AM	<i>[Signature]</i>	<i>[Signature]</i>		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

DISTRIBUTION: Blue - Region Copy
 White - Lab Copy for Return to Region

Pink - CLASS Copy
Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

[illegible]

2^57



Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

Case No.

2509:3

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped (Carrier)	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		VI	TNR60	10/24/96 AIRBORNE EXPRESS	1. Surface Water	1. HCl
Regional Information		Sampler (Name)		Airbill Number	2. Ground Water	2. HNO3
		Wesley Nauden		862445-1076	3. Leachate	3. NaHSO4
Non-Superfund Program		Sampler Signature		5. Ship To	4. Field QC	4. H2SO4
		<i>[Signature]</i>		COMPUTER	5. Soil/Sediment	5. Ice only
Site Name		3. Purpose		4600 SILICON DRIVE	6. Oil (High only)	6. Other
STAR LAKE CANAL		Early Action		RESEARCH TRIANGLE PARK NC	7. Waste (High only)	(Specify in Column D)
City, State		Lead		2709	8. Other (Specify in Column A)	N. Not preserved
D. N. N. TV		Site Spill ID		ATTN: Bob Meleber		
		<input checked="" type="checkbox"/> SF <input type="checkbox"/> PRP <input type="checkbox"/> ST <input type="checkbox"/> FED				

CLP Sample Numbers (from labels)	Matrix (from Box 6)	Conc. Low Med High	Sample Type: Comp. Grab	Preservative (from Box 7)	RAS Analysis				Regional Specific Tracking Number or Tag Numbers	Station Location Identifier	Mo/Day/Year/Time Sample Collection	Corresponding CLP Inorganic Sample No.	Sampler Initials	Field QC Qualifier
					VOA	BNA	Pest/RO	High only ARO/TOX						
FEY97	4	LOW	GRAB	5		X	X		6-016653-54	ER-03	10/23/96 19:25	FEY97	WN	R
FEY98	5	LOW	GRAB	5	X	X	X		6-016927-30	SE-10	10/23/96 18:05	MEGP46	WN	
FEY94	5	LOW	GRAB	5	X	X	X		6-016933-36	SE-11	10/23/96 17:40	MEGP47	WN	
FEY95	5	LOW	GRAB	5	X	X	X		6-016939-42	SE-12	10/23/96 18:25	MEGP48	WN	
FEY97	4	LOW	GRAB	5		X	X		6-016683-54	ER-03	10/23/96 19:25	MEGP60	WN	R
FEY97	4	LOW	GRAB	5		X	X		6-016652	ER-03	10/23/96 19:25	MEGP60	WN	R

Shipment for Case Complete? (Y/N)	Page 1 of 1	Sample(s) to be Used for Laboratory QC	Additional Sample Signatures	Chain of Custody Seal Number(s)
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CHAIN OF CUSTODY RECORD					
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>Marshall Peltz</i>	10/24/96 8:00 AM				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

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365581

1989 11 01 16:00



United States Environmental Protection Agency
Contract Laboratory Program

**Organic Traffic Report
& Chain of Custody Record**
(For Organic CLP Analysis)

Case No.

25093

1. Project Code AS-613		Account Code		2. Region No. VI		Sampling Co. TNRCC		4. Date Shipped 10/22/96		Carrier AMT Express		6. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)		7. Preservative (Enter in Column D) 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved									
Regional Information				Sampler (Name) DEBRA D. HENDRICKS				Airbill Number 8162 445 0575															
Non-Superfund Program				Sampler Signature <i>Debra D. Hendricks</i>				5. Ship To COMPTON															
Site Name Star Lake Canal				3. Purpose* <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input checked="" type="checkbox"/> RI <input type="checkbox"/> SI <input type="checkbox"/> ST <input type="checkbox"/> FED				Early Action <input type="checkbox"/> CLEM <input type="checkbox"/> PA <input type="checkbox"/> REM <input type="checkbox"/> RI <input type="checkbox"/> SI <input type="checkbox"/> ST <input type="checkbox"/> FED				Long Term Action <input type="checkbox"/> FSC <input type="checkbox"/> RD3 <input type="checkbox"/> RAS <input type="checkbox"/> O&M <input type="checkbox"/> NPLD											
City/State Port Neches, Tx				Site Spill ID				4600 S. MILLER DRIVE RESEARCH TRIANGLE PARK NC 27709															
CLP Sample Numbers (from labels)		A Matrix (from Box 6) Other:		B Conc. Low Med High		C Sample Type: Comp. Grab		D Preservative (from Box 7) Other:		E RAS Analysis VOA BNA POC High only ARO/TOX		F Regional Specific Tracking Number or Tag Numbers		G Station Location Identifier		H Mo/Day/Year/Time Sample Collection		I Corresponding CLP Inorganic Sample No.		J Sampler Initials		K Field QC Qualifier S = Spill S = Spill D = Dup R = Re-test PE = Petroleum Etc. -- = Not a QC Sample	
FEY95		4		Low		Grab		5		X X X		6-01664DE-42		HERC1		10/22/96 9:20		MF6P58		ML		R	
FEY98		4		Low		Grab		5		X		6-016655-156		FBS-01		10/22/96 9:30		---		ML		B	
FEY92		5		Low		Grab		5		X X X		6-016654-162		SPR-01		10/23/96 10:40		MF6P55		OH			
FEY93		5		Low		Grab		5		X X X		6-016655-168		SPR-02		10/22/96 11:15		MF6P56		OH			
FEY94		5		Low		Grab		5		X X X		6-016671-174		SPR-03		10/22/96 12:00		MF6P57		OH			
FEY96		4		Low		Grab		5		X		6-016645-172		SPR-01		10/22/96 16:20		MF6P59		OH		R	



United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

Case No.

25093

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		6	TNRCC	10/24/96	Airborne Express	1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	1. HCl 2. HNO ₃ 3. NaHSO ₄ 4. H ₂ SO ₄ 5. Ice only 6. Other (Specify in Column D) N. Not preserved
Regional Information		Sampler (Name)		Airbill Number			
		DEBRA D. HENDRICKS		862 4415 0472			
Non-Superfund Program		Sampler Signature		Ship To			
		Debra D. Hendricks		Com. Pickem			
Site Name		3. Purpose		Early Action			
Star Lake Canal				CLEM PA REM RI SI ESI			
City, State		Site Spill ID		Long-Term Action			
Port Arthur, TX				FSS RD RA O&M NPLD			

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 7)	E RAS Analysis	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K Field QC Qualifier
FEY89	5	Low	Grab	5	X X X	6-016677-80	SP-04	10/24/96 1234	MF6P52	DH	
FEY90	5	Low	Grab	5	X X X	6-017353-116	SP-03	10/24/96 1440	MF6P43	DH	
FEY81	5	Low	Grab	5	X X X	6-016695-134	SP-01	10/24/96 1450	MF6P44	DH	Q(FEY90)
FEY96	4	Low	Grab	5	X X	6-016677-116					
FEY97	4	Low	Grab	5	X X	6-016677-116	SP-02	10/24/96 1620	MF6P59	DH	R
FEY98											
FEY99											
FEY00											
FEY01											
FEY02											
FEY03											
FEY04											
FEY05											
FEY06											
FEY07											
FEY08											
FEY09											
FEY10											

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
	1 of 1	FEY89		

Relinquished by: (Signature)		Date / Time	Received by: (Signature)		Date / Time	Received by: (Signature)	
Marshall Cabello		10/24/96 5:45					
Relinquished by: (Signature)		Date / Time	Received by: (Signature)		Date / Time	Received by: (Signature)	
Relinquished by: (Signature)		Date / Time	Received for Laboratory by: (Signature)		Date / Time	Remarks: Is custody seal intact? Y/N/none	

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*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

370210

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP56

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368E

Level (low/med): LOW Date Received: 10/23/96

% Solids: 73.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1650	-		P
7440-36-0	Antimony	13.3	U	N	P
7440-38-2	Arsenic	0.75	B		F
7440-39-3	Barium	9.8	B		P
7440-41-7	Beryllium	0.27	U		P
7440-43-9	Cadmium	0.53	U		P
7440-70-2	Calcium	204	B		P
7440-47-3	Chromium	3.2			P
7440-48-4	Cobalt	1.4	B		P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	1740	-		P
7439-92-1	Lead	12.0			F
7439-95-4	Magnesium	490	B		P
7439-96-5	Manganese	18.0			P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	3.0	B		P
7440-09-7	Potassium	228	B		P
7782-49-2	Selenium	0.27	U	N	F
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	1100	B		P
7440-28-0	Thallium	0.27	U		F
7440-62-2	Vanadium	3.9	B		P
7440-66-6	Zinc	8.9			P
	Cyanide	0.34	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

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ILM04.0

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP56

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368E

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% Solids: 73.5

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CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1650	-		P
7440-36-0	Antimony	13.3	U	N	P
7440-38-2	Arsenic	0.75	B		F
7440-39-3	Barium	9.8	B		P
7440-41-7	Beryllium	0.27	U		P
7440-43-9	Cadmium	0.53	U		P
7440-70-2	Calcium	204	B		P
7440-47-3	Chromium	3.2			P
7440-48-4	Cobalt	1.4	B		P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	1740	-		P
7439-92-1	Lead	12.0	-		F
7439-95-4	Magnesium	490	B		P
7439-96-5	Manganese	18.0			P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	3.0	B		P
7440-09-7	Potassium	228	B		P
7782-49-2	Selenium	0.27	U	N	F
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	1100	B		P
7440-28-0	Thallium	0.27	U		F
7440-62-2	Vanadium	3.9	B		P
7440-66-6	Zinc	8.9			P
	Cyanide	0.34	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 12-11-1996

Subject: Contract Laboratory Program Data Review

From: *for* Melvin L. Ritter, ESAT RPO, 6MD-HC *WJ El-feky*

To: B. Canellas, 6SF-RA

Site: STAR LAKE CANAL

Case#: 25093

SDG#: FE-Y80

The EPA Region 6 Houston Branch ESAT data validation team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review and assessment report for this case.

The data package was found to be:

- () Acceptable: No major problems with data package.
- (X) Provisional: Use of data requires caution.
Data is acceptable for Regional use. Problems are noted in the review report.
- () Unacceptable: Some or all of data should not be used.
Problems are noted in the review report.

Questions regarding the data review report can be addressed to me.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. El-feky, Region 6 Data Coordinator

Files (2)



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LOCKHEED MARTIN SERVICES GROUP
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TX 77074

MEMORANDUM

DATE: December 4, 1996
TO: Dr. Melvin Ritter, ESAT RPO, Region VI
FROM: Dr. Tom C.H. Chiang, ESAT ETM, Region VI
SUBJECT: CLP Data Review *Jan C.H. Chiang*
REF: TDF # 6-7063A ESAT # O-1768

Attached is the data review summary for Case # 25093
SDG # FEY80
Site Star Lake Canal

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF THE DATA PACKAGE

The data package contained the following contractual non-compliance as determined by hard copy data review and CCS audit.

The laboratory extracted the following 13 Pest/PCB samples 1 day past the contractual holding time limit (OLM03.0, page D-20/PEST, Section 8.4.1):

FE-Y77, FE-Y82, FE-Y83, FE-Y84, FE-Y85, FE-Y86,
FE-Y87, FE-Y88, FE-Y90, FE-Y91, FE-Z01, FE-Z02,
and FE-Z03.

This deficiency did not affect sample results.

II. TECHNICAL USABILITY ASSESSMENT OF THE DATA PACKAGE

The total number of results reviewed was 2,375 for this data package. The data package is technically provisional because of the following significant technical problems.

1. One BNA sample had a low internal standard response.
2. The laboratory was unable to completely resolve benzo(b)fluoranthene and benzo(k)fluoranthene in one BNA sample.
3. Acetone results for 17 VOA samples were qualified because of a calibration problem.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099
ORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	25093	SITE	Star Lake Canal
LABORATORY	COMPU	NO. OF SAMPLES	19
CONTRACT#	68-D5-0004	MATRIX	Soil
SDG#	FEY80	REVIEWER (IF NOT ESD)	ESAT
SOW#	RAS SOW OLM03.2	REVIEWER'S NAME	Wallace Doong
ACCT#	7FAXJN10	SF#	FAXUZZ
		COMPLETION DATE	December 4, 1996

SAMPLE NO.	FE-Y77	FE-Y83	FE-Y87	FE-Y91	FE-Z01
	FE-Y80	FE-Y84	FE-Y88	FE-Y92	FE-Z02
	FE-Y81	FE-Y85	FE-Y89	FE-Y93	FE-Z03
	FE-Y82	FE-Y86	FE-Y90	FE-Y94	

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST
1. HOLDING TIMES	O	O	O
2. GC/MS TUNE/INSTR. PERFORM.	O	O	O
3. CALIBRATIONS	M	M	O
4. BLANKS	O	O	O
5. SMC/SURROGATES	O	O	O
6. MATRIX SPIKE/DUPLICATE	O	O	O
7. OTHER QC	O	O	O
8. INTERNAL STANDARDS	O	M	N/A
9. COMPOUND ID/QUANTITATION	O	O	M
10. PERFORMANCE/COMPLETENESS	O	O	O
11. OVERALL ASSESSMENT	M	M	M

O = Data had no problems.

M = Data qualified due to major or minor problems.

Z = Data unacceptable.

NA = Not applicable.

ACTION ITEMS: None.

AREA OF CONCERN: VOA Acetone and methylene chloride failed technical %RSD and/or %D calibration criteria. BNA One analyte failed technical minimum RRF criteria. One sample had a low internal standard response. The laboratory was unable to completely resolve benzo(b)fluoranthene and benzo(k)fluoranthene in one sample. Pest/PCB The laboratory extracted 13 samples 1 day past the contractual holding time limit. Two Pest/PCB samples had inconsistent two column quantitation results for several analytes.

NOTABLE PERFORMANCE: The data package was 10 days early.

**COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW**

CASE 25093 SDG FEY80 SITE Star Lake Canal LAB COMPU

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

<u>No.</u>	<u>Acceptable</u>	<u>Provisional</u>	<u>Unacceptable</u>
VOA	<u>2</u>	<u>17</u>	<u></u>
BNA	<u>14</u>	<u>5</u>	<u></u>
PEST	<u>17</u>	<u>2</u>	<u></u>

COMMENTS: The case consisted of 19 soil samples for complete RAS organics analysis. The OTR/COC Record designated sample FE-Y89 for MS/MSD analyses and samples FE-Y80/FE-Y81 as a field duplicate pair. The data package arrived 10 days early for the contractual 35-day turnaround time. However, the laboratory extracted 13 Pest/PCB samples one day past the contractual holding time limit.

TCL analytes reported above CRQL's included 2-butanone, xylene, ethylbenzene, PAH's (polynuclear aromatic hydrocarbons), DDT, endrin ketone, aroclor 1254, and blank contaminants acetone and methylene chloride. The laboratory performed a medium level analysis for BNA sample FE-Y84. All VOA and other BNA samples were analyzed at the low level.

BNA Because of high concentrations (up to 210,000 ug/Kg) of PAH's, sample FE-Y84 was analyzed at medium level and low level samples FE-Y77 and FE-Z01 required dilutions. The laboratory reanalyzed sample FE-Y93 because of low internal standard (IS) responses. The reviewer recommends using the reanalysis results because of better overall QC performance. The laboratory was unable to completely resolve benzo(b)fluoranthene and benzo(k)fluoranthene in sample FE-Z01.

Some data are provisional for 17 VOA, 5 BNA, and 2 Pest/PCB samples because of problems with calibration, IS performance, and compound identification and quantitation. The technical usability of all reported sample results is indicated by ESAT's final data qualifiers in the attached Data Summary Table. An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the Evidence Inventory Checklist is attached to this report.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL AND TECHNICAL ISSUES. THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

**ORGANIC QA REVIEW
CONTINUATION PAGE**

CASE 25093 SDG FEY80 SITE Star Lake Canal LAB COMPU

1. **Holding Times:** Acceptable. The laboratory extracted Pest/PCB samples FE-Y77, FE-Y82, FE-Y83, FE-Y84, FE-Y85, FE-Y86, FE-Y87, FE-Y88, FE-Y90, FE-Y91, FE-Z01, FE-Z02, and FE-Z03 one day past the contractual holding time limit. Since the holding time was not excessive, the reviewer did not qualify the results. All other samples met contractual holding time criteria.

2. **Tuning/Performance:** Acceptable. The BFB and DFTPP analyses met ion abundance criteria. All sample analyses met instrument performance guidelines.

3. **Calibrations:** Provisional. TCL compounds met contractual calibration criteria. The reviewer qualified the methylene chloride result in sample FE-Y81 and all acetone concentrations above CRQL's as estimated because these analytes failed technical %RSD and/or %D calibration criteria. The reviewer also qualified the 2,4-dinitrophenol quantitation limits as estimated for BNA samples FE-Y80, FE-Y81, and FE-Y89 because the analyte failed technical minimum RRF criteria.

4. **Blanks:** Acceptable. The method, storage, and instrument blanks met contractual QC guidelines. The method blanks contained methylene chloride, acetone, naphthalene, phenanthrene, anthracene, delta-BHC, heptachlor, DDE, and endrin below the upper contractual limit. The reviewer recommends that the laboratory "B"-flagged results, except naphthalene in BNA sample FE-Y84, should be considered as undetected (U) because the sample concentrations were less than 10X the associated method blank values. All other laboratory blanks were free of TCL contamination.

Rinsates/Field blank: The following field QC samples are associated with this SDG:

rinsate samples FE-Y95, FE-Y96, and FE-Y97 from SDG FEY95 and rinsate sample FE-W52 from Case/SDG 25013/FEW52; and

field blank samples FE-Y98 and FE-Y99 from SDG FEY95 and field blank sample FE-W53 from Case/SDG 25013/FEW52.

Rinsate sample FE-W53, collected about one month before the samples for this SDG were collected, contained chloroform, 2-butanone, and bis(2-ethylhexyl)phthalate above CRQL's. One or more of the following compounds were detected below CRQL's in the other field QC samples:

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25093 SDG FEY80 SITE Star Lake Canal LAB COMPU

4. Blanks:

Rinsates/Field blank: (continued)

methylene chloride, acetone, bromodichloromethane, phenol,
2-hexanone, diethylphthalate, di-n-butylphthalate,
heptachlor, and DDE.

The user is advised to use results for these analytes in the soil samples with caution because of possible field/equipment contamination.

5. System Monitoring Compounds (SMC's)/Surrogates: Acceptable. The SMC and surrogate recoveries generally met QC criteria except as noted below.

BNM Many surrogate recoveries exceeded QC limits for sample FE-Y93. The reviewer recommends using data from the reanalysis, FE-Y93RE, because only one surrogate recovery is outlying. Data qualification is not required. Samples FE-Y84MS/MSD had a high S6 recovery, but the unspiked sample had acceptable surrogate recoveries.

Pest/PCB Sample FE-Y82 had high DCB recoveries on both columns. Result qualification was unnecessary because no TCL analytes were reported above CRQL's in the sample. DCB had high recoveries on one column for samples FE-Y84, FE-Y91, and FE-Z01. Result qualification was not necessary because the second column had acceptable recoveries. The laboratory misreported several other surrogate recoveries, but the reviewer verified that the recoveries were within the advisory QC limits.

6. Matrix Spike/Matrix Spike Duplicate: Acceptable. The MS/MSD results generally met QC criteria for accuracy and recovery, and exceptions are noted below.

Medium Level BNM MS/MSD: Many spike compounds had high MS and/or MSD recoveries, and two analytes also had outlying %RPD's. The high recoveries would only affect results for the spike analytes detected above CRQL's in the native sample FE-Y84, which are acenaphthene and pyrene. These two compounds had high MSD recoveries but acceptable MS recoveries. The reviewer did not qualify results for these two compounds because the outlying MSD recoveries may not be accurate as explained below.

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25093 SDG FEY80 SITE Star Lake Canal LAB COMPU

6. Matrix Spike/Matrix Spike Duplicate:

Medium Level BNA Ms/MSD: (continued) The MSD sample contained much higher concentrations of non-spike compounds (up to 8.9X higher) than the native or MS sample, probably attributed to inhomogeneous matrices. This may very well be the case for spike analytes acenaphthene and pyrene. Since the native concentrations used for the MSD recovery calculation were taken from the unspiked sample analysis, which may be substantially lower than the actual concentrations, high biased recoveries were very likely for these two compounds.

7. Other QC:

Field Duplicate: Acceptable. Duplicate results were generally consistent.

8. Internal Standards (IS): Provisional. The IS responses met QC criteria except those noted below.

BNA Samples FE-Y93 and FE-Y93RE had low IS6 responses. The reviewer recommends using the reanalysis results because of better overall QC performance. However, the reviewer qualified analyte results associated with IS6 as estimated for sample FE-Y93RE with quantitation limits biased low.

9. Compound Identity/Quantitation: Provisional. Sample spectra met identification criteria for all reported VOA and BNA analytes.

VOA The samples contained 2-butanone, xylene, and ethylbenzene, and several blank contaminants above CRQL's.

BNA Sample FE-Y84 was analyzed at medium level and required a dilution (2X) because of high PAH concentrations (up to 210,000 ug/Kg). Samples FE-Y77 and FE-Z01 were also diluted because of high PAH concentrations. The laboratory could not resolve benzo(b)fluoranthene and benzo(k)fluoranthene in sample FE-Z01 and reported the same peak for both isomers. The reviewer qualified benzo(b)fluoranthene and benzo(k)fluoranthene results in sample FF-Z01 as estimated and biased high because of the coelution. The laboratory reported inconsistent concentrations (up to 8.9X difference) for the unspiked analytes in the MSD sample and the unspiked sample of FE-Y84. The reviewer did not qualify any results because the MS analysis confirmed unspiked sample results.

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25093 SDG FEY80 SITE Star Lake Canal LAB COMPU

9. Compound Identity/Quantitation:

Pest/PCB The analytes reported above CRQL's were DDT and endrin ketone in sample FE-Y84 and aroclor-1254 in sample FE-Y77. The laboratory also reported aroclor-1254 and pesticides in several samples below the CRQL's. All reported positive results met compound identification criteria, and GC/MS confirmation was not required. The reviewer qualified results as estimated for aroclor 1254 in sample FE-Y77 and DDD and endrin ketone in sample FE-Y84 because the two column quantitation results differed by more than 25%.

The endrin ketone identification is questionable for sample FE-Y84 because of the absence of its commonly co-existing pesticide endrin. The laboratory reported extremely low concentrations (less than one tenth of CRQL's) for many sample analytes. The reviewer raised these unrealistic concentrations to the CRQL's and flagged them as undetected per Region 6 guideline.

10. Performance/Completeness: Acceptable. The data package was complete but had some deficiencies. The laboratory was contacted for the necessary resubmissions (see attached Fax Record Log).

11. Overall Assessment: Data are acceptable for 2 VOA, 14 BNA, and 17 Pest/PCB samples.

VOA: Some results are provisional for the following samples because of calibration deficiencies:

FE-Y77, FE-Y80, FE-Y81, FE-Y82, FE-Y83, FE-Y84, FE-Y85,
FE-Y86, FE-Y87, FE-Y89, FE-Y90, FE-Y92, FE-Y93, FE-Y94,
FE-Z01, FE-Z01, and FE-Z03.

BNA: Some results are provisional for samples FE-Y80, FE-Y81, FE-Y89, FE-Y93RE, and FE-Z01 because of problems with IS performance, calibration, compound quantitation.

Pest/PCB: Some results are provisional for samples FE-Y77 and FE-Y84 because of problems with compound identification and quantitation.

ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

- U Not detected at reported quantitation limit.
- N Identification is tentative.
- J Estimated value.
- R Unusable.
- A High biased. Actual concentration may be lower than the concentration reported.
- V Low biased. Actual concentration may be higher than the concentration reported.
- F+ A false positive exists.
- F- A false negative exists.
- B This result may be high biased because of laboratory/field contamination. The reported concentration is above 5X or 10X the concentration reported in the method/field blank.
- UJ Estimated quantitation limit.
- T Identification is questionable because of absence of other commonly coexisting pesticides.
- * Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25093

SDG No. FEY80

SDG Nos. To Follow

SAS No.

Date Rec 11/19/96

EPA Lab ID: COMPU	ORIGINALS	YES	NO	N/A
Lab Location: RTP, NC	CUSTODY SEALS			
Region: 6 Audit No.: 25093/FEY80	1. Present on package?	X		
Re_Submitted CSF? Yes No X	2. Intact upon receipt?	X		
Box No(s): ONE	FORM DC-2			
COMMENTS:	3. Numbering scheme accurate?	X		
	4. Are enclosed documents listed?	X		
	5. Are listed documents enclosed?	X		
	FORM DC-1			
	6. Present?	X		
	7. Complete?	X		
	8. Accurate?	X		
	CHAIN-OF-CUSTODY RECORD(s)			
	9. Signed?	X		
	10. Dated?	X		
	TRAFFIC REPORT(s) PACKING LIST(s)			
	11. Signed?	X		
	12. Dated?	X		
	AIRBILLS/AIRBILL STICKER			
	13. Present?	X		
	14. Signed?	X		
	15. Dated?	X		
	SAMPLE TAGS			
	16. Does DC-1 list tags as being included?	X		
	17. Present?	X		
	OTHER DOCUMENTS			
	18. Complete?	X		
	19. Legible?	X		
	20. Original?		X	
	20a. If "NO", does the copy indicate where original documents are located?	X		

Over for additional comments.

Audited by:

Wallace Doong

Wallace Doong / ESAT Data Reviewer

Date 12/03/96

Audited by:

Date

Audited by:

Date

Signature

Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT:

Date Entered:

Date Reviewed:

Entered by:

Reviewed by:

Signature

Printed Name/Title

DC-2

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y77	FE-Y80	FE-Y81	FE-Y82	FE-Y83	FE-Y84	FE-Y85
Chloromethane	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Bromomethane	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Vinyl chloride	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Chloroethane	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Methylene chloride	28 U	20 U	23 UJ	20 U	27 U	30 U	24 U
Acetone	89 UJ	79 UJ	130 UJ	96 UJ	60 UJ	74 UJ	48 UJ
Carbon disulfide	28 U	20 U	19 U	20 U	27 U	30 U	24 U
1,1-Dichloroethene	28 U	20 U	19 U	20 U	27 U	30 U	24 U
1,1-Dichloroethane	28 U	20 U	19 U	20 U	27 U	30 U	24 U
1,2-Dichloroethene (total)	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Chloroform	28 U	20 U	19 U	20 U	27 U	30 U	24 U
1,2-Dichloroethane	28 U	20 U	19 U	20 U	27 U	30 U	24 U
2-Butanone	28 U	20 U	19 U	21	14 J	13 J	24 U
1,1,1-Trichloroethane	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Carbon tetrachloride	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Bromodichloromethane	28 U	20 U	19 U	20 U	27 U	30 U	24 U
1,2-Dichloropropane	28 U	20 U	19 U	20 U	27 U	30 U	24 U
cis-1,3-Dichloropropene	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Trichloroethene	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Dibromochloromethane	28 U	20 U	19 U	20 U	27 U	30 U	24 U
1,1,2-Trichloroethane	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Benzene	28 U	20 U	19 U	20 U	27 U	30 U	24 U
trans-1,3-Dichloropropene	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Bromoform	28 U	20 U	19 U	20 U	27 U	30 U	24 U
4-Methyl-2-pentanone	28 U	20 U	19 U	20 U	27 U	30 U	24 U
2-Hexanone	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Tetrachloroethene	28 U	20 U	19 U	20 U	27 U	30 U	24 U
1,1,2,2-Tetrachloroethane	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Toluene	28 U	20 U	19 U	20 U	27 U	7 J	24 U
Chlorobenzene	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Ethylbenzene	8 J	20 U	19 U	20 U	27 U	310	38
Styrene	28 U	20 U	19 U	20 U	27 U	30 U	24 U
Xylenes (total)	10 J	20 U	19 U	20 U	27 U	120	17 J
Sample wt (g):	5.0	5.0	5.0	5.0	5.0	5.0	5.0
%Moisture:	64	50	48	50	63	67	58
Dilution Factor:	1	1	1	1	1	1	1
Level:	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Number of TIC's:	14	0	0	3	5	30	11

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y86	FE-Y87	FE-Y88	FE-Y89	FE-Y90	FE-Y91	FE-Y92
Chloromethane	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Bromomethane	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Vinyl chloride	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Chloroethane	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Methylene chloride	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Acetone	43 UJ	59 UJ	34 U	66 UJ	15 UJ	16 U	83 UJ
Carbon disulfide	19 U	28 U	34 U	16 U	15 U	16 U	24 U
1,1-Dichloroethene	19 U	28 U	34 U	16 U	15 U	16 U	24 U
1,1-Dichloroethane	19 U	28 U	34 U	16 U	15 U	16 U	24 U
1,2-Dichloroethene (total)	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Chloroform	19 U	28 U	34 U	16 U	15 U	16 U	24 U
1,2-Dichloroethane	19 U	28 U	34 U	16 U	15 U	16 U	24 U
2-Butanone	19 U	28 U	34 U	16 U	15 U	16 U	24 U
1,1,1-Trichloroethane	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Carbon tetrachloride	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Bromodichloromethane	19 U	28 U	34 U	16 U	15 U	16 U	24 U
1,2-Dichloropropane	19 U	28 U	34 U	16 U	15 U	16 U	24 U
cis-1,3-Dichloropropene	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Trichloroethene	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Dibromochloromethane	19 U	28 U	34 U	16 U	15 U	16 U	24 U
1,1,2-Trichloroethane	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Benzene	19 U	28 U	34 U	16 U	15 U	16 U	24 U
trans-1,3-Dichloropropene	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Bromoform	19 U	28 U	34 U	16 U	15 U	16 U	24 U
4-Methyl-2-pentanone	19 U	28 U	34 U	16 U	15 U	16 U	24 U
2-Hexanone	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Tetrachloroethene	19 U	28 U	34 U	16 U	15 U	16 U	24 U
1,1,2,2-Tetrachloroethane	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Toluene	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Chlorobenzene	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Ethylbenzene	3 J	28 U	34 U	16 U	15 U	16 U	24 U
Styrene	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Xylenes (total)	19 U	28 U	34 U	16 U	15 U	16 U	24 U
Sample wt (g):	5.0	5.0	5.0	5.0	5.0	5.0	5.0
%Moisture:	48	64	71	36	32	38	58
Dilution Factor:	1	1	1	1	1	1	1
Level:	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Number of TIC's:	5	1	0	0	0	0	0

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y93	FE-Y94	FE-Z01	FE-Z02	FE-Z03		
Chloromethane	18 U	14 U	22 U	17 U	17 U		
Bromomethane	18 U	14 U	22 U	17 U	17 U		
Vinyl chloride	18 U	14 U	22 U	17 U	17 U		
Chloroethane	18 U	14 U	22 U	17 U	17 U		
Methylene chloride	18 U	14 U	22 U	17 U	17 U		
Acetone	56 UJ	83 UJ	91 UJ	49 UJ	36 J		
Carbon disulfide	18 U	14 U	22 U	17 U	17 U		
1,1-Dichloroethene	18 U	14 U	22 U	17 U	17 U		
1,1-Dichloroethane	18 U	14 U	22 U	17 U	17 U		
1,2-Dichloroethene (total)	18 U	14 U	22 U	17 U	17 U		
Chloroform	18 U	14 U	22 U	17 U	17 U		
1,2-Dichloroethane	18 U	14 U	22 U	17 U	17 U		
2-Butanone	18 U	14 U	22 U	17 U	17 U		
1,1,1-Trichloroethane	18 U	14 U	22 U	17 U	17 U		
Carbon tetrachloride	18 U	14 U	22 U	17 U	17 U		
Bromodichloromethane	18 U	14 U	22 U	17 U	17 U		
1,2-Dichloropropane	18 U	14 U	22 U	17 U	17 U		
cis-1,3-Dichloropropene	18 U	14 U	22 U	17 U	17 U		
Trichloroethene	18 U	14 U	22 U	17 U	17 U		
Dibromochloromethane	18 U	14 U	22 U	17 U	17 U		
1,1,2-Trichloroethane	18 U	14 U	22 U	17 U	17 U		
Benzene	18 U	14 U	22 U	17 U	17 U		
trans-1,3-Dichloropropene	18 U	14 U	22 U	17 U	17 U		
Bromoform	18 U	14 U	22 U	17 U	17 U		
4-Methyl-2-pentanone	18 U	14 U	22 U	17 U	17 U		
2-Hexanone	18 U	14 U	22 U	17 U	17 U		
Tetrachloroethene	18 U	14 U	22 U	17 U	17 U		
1,1,2,2-Tetrachloroethane	18 U	14 U	22 U	17 U	17 U		
Toluene	18 U	14 U	22 U	17 U	17 U		
Chlorobenzene	18 U	14 U	22 U	17 U	17 U		
Ethylbenzene	18 U	14 U	22 U	17 U	17 U		
Styrene	18 U	14 U	22 U	17 U	17 U		
Xylenes (total)	18 U	14 U	18 J	17 U	17 U		
Sample wt (g):	5.0	5.0	5.0	5.0	5.0		
%Moisture:	43	31	55	40	42		
Dilution Factor:	1	1	1	1	1		
Level:	LOW	LOW	LOW	LOW	LOW		
Number of TIC's:	0	0	17	5	0		

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: M. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y77	FE-Y80	FE-Y81	FE-Y82	FE-Y83	FE-Y84	FE-Y84DL
Phenol	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
bis(2-Chloroethyl)ether	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
2-Chlorophenol	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
1,3-Dichlorobenzene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
1,4-Dichlorobenzene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
1,2-Dichlorobenzene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
2-Methylphenol	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
2,2'-Oxybis(1-chloropropane)	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
4-Methylphenol	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
N-Nitroso-di-n-propylamine	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Hexachloroethane	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Nitrobenzene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Isophorone	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
2-Nitrophenol	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
2,4-Dimethylphenol	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
bis(2-Chloroethoxy)methane	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
2,4-Dichlorophenol	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
1,2,4-Trichlorobenzene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Naphthalene	4600 J	660 U	630 U	650 U	590 J	250000 *	210000
4-Chloroaniline	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Hexachlorobutadiene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
4-Chloro-3-methylphenol	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
2-Methylnaphthalene	7200 J	660 U	630 U	650 U	2300	84000	68000 *
Hexachlorocyclopentadiene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
2,4,6-Trichlorophenol	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
2,4,5-Trichlorophenol	23000 U	1700 U	1600 U	1600 U	2200 U	76000 U	150000 U*
2-Chloronaphthalene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
2-Nitroaniline	23000 U	1700 U	1600 U	1600 U	2200 U	76000 U	150000 U*
Dimethylphthalate	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Acenaphthylene	12000	660 U	630 U	650 U	660 J	25000 J	16000 *
2,6-Dinitrotoluene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
3-Nitroaniline	23000 U	1700 U	1600 U	1600 U	2200 U	76000 U	150000 U*
Acenaphthene	14000	660 U	630 U	650 U	2700	70000	57000 *
2,4-Dinitrophenol	23000 U	1700 UJv	1600 UJv	1600 U	2200 U	76000 U	150000 U*
4-Nitrophenol	23000 U	1700 U	1600 U	1600 U	2200 U	76000 U	150000 U*
Dibenzofuran	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
2,4-Dinitrotoluene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Diethylphthalate	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
4-Chlorophenyl-phenylether	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Fluorene	18000	660 U	630 U	650 U	1500	61000	48000 *
4-Nitroaniline	23000 U	1700 U	1600 U	1600 U	2200 U	76000 U	150000 U*
4,6-Dinitro-2-methylphenol	23000 U	1700 U	1600 U	1600 U	2200 U	76000 U	150000 U*
N-Nitrosodiphenylamine	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
4-Bromophenyl-phenylether	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Hexachlorobenzene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Pentachlorophenol	23000 U	1700 U	1600 U	1600 U	2200 U	76000 U	150000 U*
Phenanthrene	55000	660 U	630 U	650 U	2700	140000 U	110000 *
Anthracene	11000	660 U	630 U	650 U	580 J	30000 U	22000 *

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y77	FE-Y80	FE-Y81	FE-Y82	FE-Y83	FE-Y84	FE-Y84DL
Carbazole...	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Di-n-butylphthalate	9000 U	660 U	53 J	650 U	890 U	30000 U	61000 U*
Fluoranthene	12000	660 U	630 U	650 U	760 J	24000 J	18000 *
Pyrene	22000	660 U	630 U	650 U	1400	48000	40000 *
Butylbenzylphthalate	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
3,3'-Dichlorobenzidine	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Benzo(a)anthracene	5600 J	660 U	630 U	650 U	340 J	12000 J	12000 *
Chrysene	5300 J	660 U	630 U	650 U	350 J	12000 J	9400 *
bis(2-Ethylhexyl)phthalate	9000 U	130 J	120 J	72 J	110 J	30000 U	61000 U*
Di-n-octylphthalate	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Benzo(b)fluoranthene	2700 J	660 U	630 U	650 U	280 J	6000 J	5600 *
Benzo(k)fluoranthene	3000 J	660 U	630 U	650 U	240 J	6800 J	6200 *
Benzo(a)pyrene	3900 J	660 U	630 U	650 U	280 J	9400 J	8000 *
Indeno(1,2,3-cd)pyrene	720 J	660 U	630 U	650 U	890 U	30000 U	61000 U*
Dibenz(a,h)anthracene	9000 U	660 U	630 U	650 U	890 U	30000 U	61000 U*
Benzo(g,h,i)perylene	860 J	660 U	630 U	650 U	890 U	30000 U	61000 U*
Sample wt (g):	30.4	30.0	30.3	30.4	30.1	1.0	1.0
%Moisture:	64	50	48	50	63	67	67
Dilution Factor:	10	1	1	1	1	1	2
Level:	LOW	LOW	LOW	LOW	LOW	MED	MED
Number of TIC's:	30	12	10	3	31	30	14

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y85	FE-Y86	FE-Y87	FE-Y88	FE-Y89	FE-Y90	FE-Y91
Phenol	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
bis(2-Chloroethyl)ether	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2-Chlorophenol	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
1,3-Dichlorobenzene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
1,4-Dichlorobenzene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
1,2-Dichlorobenzene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2-Methylphenol	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2,2'-Oxybis(1-chloropropane)	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
4-Methylphenol	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
N-Nitroso-di-n-propylamine	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Hexachloroethane	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Nitrobenzene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Isophorone	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2-Nitrophenol	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2,4-Dimethylphenol	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
bis(2-Chloroethoxy)methane	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2,4-Dichlorophenol	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
1,2,4-Trichlorobenzene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Naphthalene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
4-Chloroaniline	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Hexachlorobutadiene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
4-Chloro-3-methylphenol	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2-Methylnaphthalene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Hexachlorocyclopentadiene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2,4,6-Trichlorophenol	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2,4,5-Trichlorophenol	2000 U	1600 U	2300 U	2800 U	1300 U	1200 U	1300 U
2-Chloronaphthalene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2-Nitroaniline	2000 U	1600 U	2300 U	2800 U	1300 U	1200 U	1300 U
Dimethylphthalate	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Acenaphthylene	230 J	630 U	910 U	1100 U	510 U	480 U	530 U
2,6-Dinitrotoluene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
3-Nitroaniline	2000 U	1600 U	2300 U	2800 U	1300 U	1200 U	1300 U
Acenaphthene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2,4-Dinitrophenol	2000 U	1600 U	2300 U	2800 U	1300 U	1200 U	1300 U
4-Nitrophenol	2000 U	1600 U	2300 U	2800 U	1300 U	1200 U	1300 U
Dibenzofuran	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
2,4-Dinitrotoluene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Diethylphthalate	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
4-Chlorophenyl-phenylether	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Fluorene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
4-Nitroaniline	2000 U	1600 U	2300 U	2800 U	1300 U	1200 U	1300 U
4,6-Dinitro-2-methylphenol	2000 U	1600 U	2300 U	2800 U	1300 U	1200 U	1300 U
N-Nitrosodiphenylamine	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
4-Bromophenyl-phenylether	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Hexachlorobenzene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Pentachlorophenol	2000 U	1600 U	2300 U	2800 U	1300 U	1200 U	1300 U
Phenanthrene	28 J	630 U	910 U	1100 U	510 U	480 U	530 U
Anthracene	94 J	630 U	910 U	1100 U	510 U	480 U	530 U

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y85	FE-Y86	FE-Y87	FE-Y88	FE-Y89	FE-Y90	FE-Y91
Carbazole	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Di-n-butylphthalate	780 U	630 U	910 U	140 J	510 U	480 U	130 J
Fluoranthene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Pyrene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Butylbenzylphthalate	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
3,3'-Dichlorobenzidine	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Benzo(a)anthracene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Chrysene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
bis(2-Ethylhexyl)phthalate	780 U	630 U	120 J	1100 U	510 U	72 J	60 J
Di-n-octylphthalate	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Benzo(b)fluoranthene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Benzo(k)fluoranthene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Benzo(a)pyrene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Indeno(1,2,3-cd)pyrene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Dibenz(a,h)anthracene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Benzo(g,h,i)perylene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Sample wt (g):	30.2	30.2	30.2	30.4	30.4	30.3	30.3
%Moisture:	58	48	64	71	36	32	38
Dilution Factor:	1	1	1	1	1	1	1
Level:	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Number of TIC's:	2	4	5	14	16	6	13

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y92	FE-Y93	FE-Y93RE	FE-Y94	FE-Z01	FE-Z02	FE-Z03
Phenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
bis(2-Chloroethyl)ether	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2-Chlorophenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
1,3-Dichlorobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
1,4-Dichlorobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
1,2-Dichlorobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2-Methylphenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,2'-Oxybis(1-chloropropane)	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
4-Methylphenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
N-Nitroso-di-n-propylamine	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Hexachloroethane	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Nitrobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Isophorone	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2-Nitrophenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,4-Dimethylphenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
bis(2-Chloroethoxy)methane	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,4-Dichlorophenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
1,2,4-Trichlorobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Naphthalene	780 U	580 U*	580 U	480 U	6700 U	550 U	570 U
4-Chloroaniline	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Hexachlorobutadiene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
4-Chloro-3-methylphenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2-Methylnaphthalene	780 U	580 U*	580 U	480 U	8000 U	550 U	60 U
Hexachlorocyclopentadiene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,4,6-Trichlorophenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,4,5-Trichlorophenol	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
2-Chloronaphthalene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2-Nitroaniline	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
Dimethylphthalate	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Acenaphthylene	780 U	580 U*	580 U	480 U	7300 U	82 U	98 U
2,6-Dinitrotoluene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
3-Nitroaniline	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
Acenaphthene	780 U	580 U*	580 U	480 U	8800 U	550 U	570 U
2,4-Dinitrophenol	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
4-Nitrophenol	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
Dibenzofuran	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,4-Dinitrotoluene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Diethylphthalate	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
4-Chlorophenyl-phenylether	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Fluorene	780 U	580 U*	580 U	480 U	9200 U	550 U	570 U
4-Nitroaniline	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
4,6-Dinitro-2-methylphenol	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
N-Nitrosodiphenylamine	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
4-Bromophenyl-phenylether	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Hexachlorobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Pentachlorophenol	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
Phenanthrene	780 U	580 U*	580 U	480 U	21000 U	550 U	570 U
Anthracene	780 U	580 U*	580 U	480 U	5000 U	550 U	570 U

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

PESTICIDES/PCBs	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y77	FE-Y80	FE-Y81	FE-Y82	FE-Y83	FE-Y84	FE-Y85
alpha-BHC	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	2.9 J	4.0 U
beta-BHC	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	5.2 U	4.0 U
delta-BHC	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	2.6 J	4.0 U
gamma-BHC (lindane)	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	0.67 J	4.0 U
Heptachlor	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	5.2 U	4.0 U
Aldrin	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	2.4 J	4.0 U
Heptachlor epoxide	4.7 U	3.4 U	3.2 U	3.4 U	0.91 J	5.2 U	4.0 U
Endosulfan I	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	5.2 U	4.0 U
Dieldrin	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
4,4'-DDE	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
Endrin	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
Endosulfan II	9.2 U	6.6 U	6.3 U	6.6 U	1.1 J	10 U	7.8 U
4,4'-DDD	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
Endosulfan sulfate	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
4,4'-DDT	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	20 J	7.8 U
Methoxychlor	47 U	34 U	32 U	34 U	46 U	52 U	40 U
Endrin ketone	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	18 NJ	7.8 U
Endrin aldehyde	4.0 J	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
alpha-Chlordane	2.8 J	3.4 U	3.2 U	3.4 U	4.6 U	5.2 U	4.0 U
gamma-Chlordane	4.3 J	3.4 U	3.2 U	3.4 U	1.4 J	5.2 U	4.0 U
Toxaphene	470 U	340 U	320 U	340 U	460 U	520 U	400 U
Aroclor-1016	92 U	66 U	63 U	66 U	89 U	100 U	78 U
Aroclor-1221	190 U	130 U	130 U	130 U	180 U	200 U	160 U
Aroclor-1232	92 U	66 U	63 U	66 U	89 U	100 U	78 U
Aroclor-1242	92 U	66 U	63 U	66 U	89 U	100 U	78 U
Aroclor-1248	92 U	66 U	63 U	66 U	89 U	100 U	78 U
Aroclor-1254	130 J	66 U	63 U	66 U	89 U	100 U	78 U
Aroclor-1260	92 U	66 U	63 U	66 U	89 U	100 U	78 U
Sample wt (g):	30.0	30.1	30.2	30.0	30.0	30.0	30.0
%Moisture:	64	50	48	50	63	67	58
Dilution Factor:	1	1	1	1	1	1	1

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y92	FE-Y93	FE-Y93RE	FE-Y94	FE-Z01	FE-Z02	FE-Z03
Carbazole	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Di-n-butylphthalate	780 U	580 U*	580 U	480 U	2900 U	120 J	58 J
Fluoranthene	37 J	61 *	580 U	480 U	8500 J	550 U	570 U
Pyrene	60 J	170 *	94 J	480 U	11000 J	550 U	570 U
Butylbenzylphthalate	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
3,3'-Dichlorobenzidine	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Benzo(a)anthracene	780 U	580 U*	580 U	480 U	4200 U	550 U	570 U
Chrysene	780 U	580 U*	81 J	480 U	4900 U	550 U	570 U
bis(2-Ethylhexyl)phthalate	780 U	580 U*	80 J	60 J	400 J	220 J	100 J
Di-n-octylphthalate	780 U	580 U*	580 UJv	480 U	2900 U	550 U	570 U
Benzo(b)fluoranthene	780 U	130 *	72 J	480 U	4200 J	550 U	570 U
Benzo(k)fluoranthene	780 U	140 *	65 J	480 U	4700 J	550 U	570 U
Benzo(a)pyrene	780 U	580 U*	580 UJv	480 U	3300 U	550 U	570 U
Indeno(1,2,3-cd)pyrene	780 U	580 U*	580 UJv	480 U	720 J	550 U	570 U
Dibenz(a,h)anthracene	780 U	580 U*	580 UJv	480 U	2900 U	550 U	570 U
Benzo(g,h,i)perylene	780 U	580 U*	580 UJv	480 U	580 J	550 U	570 U
Sample wt (g):	30.2	30.1	30.1	30.0	30.3	30.1	30.1
%Moisture:	58	43	43	31	55	40	42
Dilution Factor:	1	1	1	1	4	1	1
Level:	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Number of TIC's:	31	30	30	8	30	14	11

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

PESTICIDES/PCBs	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y86	FE-Y87	FE-Y88	FE-Y89	FE-Y90	FE-Y91	FE-Y92
alpha-BHC	3.3 U	4.7 U	5.9 U	2.6 U	2.5 U	2.7 U	4.0 U
beta-BHC	3.3 U	4.7 U	5.9 U	2.6 U	2.5 U	2.7 U	4.0 U
delta-BHC	3.3 U	4.7 U	5.9 U	2.6 U	2.5 U	2.7 U	4.0 U
gamma-BHC (lindane)	3.3 U	4.7 U	5.9 U	2.6 U	2.5 U	2.7 U	4.0 U
Heptachlor	3.3 U	4.7 U	5.9 U	2.6 U	2.5 U	2.7 U	4.0 U
Aldrin	3.3 U	4.7 U	5.9 U	2.6 U	2.5 U	2.7 U	4.0 U
Heptachlor epoxide	3.3 U	4.7 U	5.9 U	2.6 U	2.5 U	2.7 U	4.0 U
Endosulfan I	3.3 U	4.7 U	5.9 U	2.6 U	2.5 U	2.7 U	4.0 U
Dieldrin	6.3 U	9.2 U	11 U	5.1 U	4.8 U	5.3 U	7.8 U
4,4'-DDE	6.3 U	9.2 U	11 U	5.1 U	4.8 U	5.3 U	0.81 J
Endrin	6.3 U	9.2 U	11 U	5.1 U	4.8 U	5.3 U	7.8 U
Endosulfan II	6.3 U	9.2 U	11 U	5.1 U	4.8 U	5.3 U	7.8 U
4,4'-DDD	6.3 U	9.2 U	11 U	5.1 U	4.8 U	5.3 U	3.6 J
Endosulfan sulfate	6.3 U	9.2 U	11 U	5.1 U	4.8 U	5.3 U	1.5 J
4,4'-DDT	6.3 U	9.2 U	11 U	5.1 U	4.8 U	5.3 U	7.8 U
Methoxychlor	33 U	47 U	59 U	26 U	25 U	27 U	40 U
Endrin ketone	6.3 U	9.2 U	11 U	5.1 U	4.8 U	5.3 U	7.8 U
Endrin aldehyde	6.3 U	9.2 U	11 U	0.62 J	4.8 U	5.3 U	1.6 J
alpha-Chlordane	3.3 U	4.7 U	0.64 J	2.6 U	2.5 U	2.7 U	4.0 U
gamma-Chlordane	3.3 U	4.7 U	5.9 U	2.6 U	2.5 U	2.7 U	4.0 U
Toxaphene	330 U	470 U	590 U	260 U	250 U	270 U	400 U
Aroclor-1016	63 U	92 U	110 U	51 U	48 U	53 U	78 U
Aroclor-1221	130 U	190 U	230 U	100 U	98 U	110 U	160 U
Aroclor-1232	63 U	92 U	110 U	51 U	48 U	53 U	78 U
Aroclor-1242	63 U	92 U	110 U	51 U	48 U	53 U	78 U
Aroclor-1248	63 U	92 U	110 U	51 U	48 U	53 U	78 U
Aroclor-1254	63 U	92 U	110 U	51 U	48 U	53 U	78 U
Aroclor-1260	63 U	92 U	110 U	51 U	48 U	53 U	78 U
Sample wt (g):	30.0	30.0	30.0	30.1	30.0	30.0	30.3
%Moisture:	48	64	71	36	32	38	58
Dilution Factor:	1	1	1	1	1	1	1

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

Star Lake Outfall Canal

Case #25093

Station No. SE-04

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEY89	6-016677
VOA	FEY89	6-016678
EXT	FEY89	6-016679
EXT	FEY89	6-016680
TM	MEGP52	6-016681
CYN	MEGP52	6-016682

10/22/96 12:34 SE-04 taken at upstream side of outfall of Canal on Nechos River

Sample taken by Debra Hendricks at 12:34 Approximate depth
is 2' below water surface. Sample is black gray clay with sand mixed
in, little odor, and moist to wet

Daniel Benson. 10/22/96

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Star Lake Outfall Canal

Case #25093

Station No. SE-05

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	<u>FEY90</u>	<u>6-016683</u>
VOA	<u>FEY90</u>	<u>6-016684</u>
EXT	<u>FEY90</u>	<u>6-016685</u>
EXT	<u>FEY90</u>	<u>6-016686</u>
TM	<u>MFGP53</u>	<u>6-016687</u>
CYN	<u>MFGP53</u>	<u>6-016688</u>

10/2

10/23/96 10:10 Sample obtained by Wes Newberry

Black clay, no sand or silt, no odor. Sticky wet black clay.

See page 9 for additional information on this sample location.

Daniel Benson 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. SE-06

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEY91	6-016689
VOA	FEY91	6-016690
EXT	FEY91	6-016691
EXT	FEY91	6-016692
TM	MFGP54	6-016693
CYN	MFGP54	6-016694

10/23/96 10:40 SE-06 collected by M. Cedilote and mixed/sampled by
W. Newberry

Sample is black to grey clay with some sand, no odor.
Upper 2 inches was silty.

Used core sampler with dedicated tubes. Recovery from tube was
difficult because of sticky clay not coming out of tube.

We used nitrile glove with push rod to extract sample from tube and
into bowl.

Recovery of sample material was not enough to fill metals and
cyanides jars; consequently ~~the~~ tot. mtk. and cyanide will not be
sent to laboratory for CPL analysis.

Daniel Benson 10/23/96

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Star Lake Outfall Canal

Case #25093

Station No. SE-07

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEY86	6-016695
VOA	FEY86	6-016696
EXT	FEY86	6-016697
EXT	FEY75	6-016698
TM	MFGP49	6-016699
CYN	MFGP49	6-016700

10/23/96

11:05 SE-07 collected by M. Cadolte Sampled by W. Denberry

Silty clay with some detritus at upper end of column
dark gray in color w/ slight decaying odor.

Sample recovery was sufficient to fill all jars, after filling
tube of core sampler twice. Sample was then mixed after VOA's were
filled first.

Daniel Benson 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. SE-08

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	<u>FEY87</u>	<u>6-016915</u>
VOA	<u>FEY87</u>	<u>6-016916</u>
EXT	<u>FEY87</u>	<u>6-016917</u>
EXT	<u>FEY87</u>	<u>6-016918</u>
TM	<u>MRGP50</u>	<u>6-016919</u>
CYN	<u>MRGP50</u>	<u>6-016920</u>

10/23/96

11:40 Sample SE-8 collected by W. Newberry - Sampled by M. Cer. lot
We are on north bank 2500' upstream from Star outfall and Neches River
confluence.

Sample is silty black clay, w/ some detritus. Sample depth approx
2' below water surface. Slight hydrogen sulfide smell.

See page 10 for additional information.

Daniel Benson - 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. SE-09

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEY88	6-016921
VOA	FEY88	6-016922
EXT	FEY88	6-016923
EXT	FEY88	6-016924
TM	MFGP51	6-016925
CYN	MFGP51	6-016926

10/23/96

12:20 Collected by W. Newberry - Sampled by M. Cedita

1st foot of sample was organic debris, 2nd foot is silty clay mixed with decaying matter. Slight H₂S odor.

2 cores were taken for composite. Star is splitting samples with TNRCC

See page 10 for additional information on this location.

Daniel Benson 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. SE-10

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	<u>FEY83</u>	<u>6-016927</u>
VOA	<u>FEY83</u>	<u>6-016928</u>
EXT	<u>FEY83</u>	<u>6-016929</u>
EXT	<u>FEY83</u>	<u>6-016930</u>
TM	<u>MFGP46</u>	<u>6-016931</u>
CYN	<u>MFGP46</u>	<u>6-016932</u>

10/23/96 6:05 Sampled obtained by W. Newberry

Black silty sand w/some clay. Wet to very wet with heavy
chemical odor.

See page 12 for sample location information.

Star is splitting sample

Daniel Benson 10/23/96

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Star Lake Outfall Canal

Case #25093

Station No. SE-11

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEY84	6-016933
VOA	FEY84	6-016934
EXT	FEY84	6-016935
EXT	FEY84	6-016936
TM	MFGP47	6-016937
CYN	MFGP47	6-016938

10/23

5:40 Sampled by W. Newberry
Black^{grey} silty sand w/ some clay - 2 distinct layers
Strong chemical odor - sheen/rainbow color to matrix

Star is splitting sample with TWRC.

See page 11 for description of sample location

Sample obtained at approx depth of 2.5' below water surface

Daniel Benson 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. SE-12

	SAMPLE ID #	C.O.C. #
VOA	FEY85	6-016939
VOA	FEY85	6-016940
EXT	FEY85	6-016941
EXT	FEY85	6-016942
TM	MFGP48	6-016943
CYN	MFGP48	6-016944

10/23/96 Sampled by W. Newberry at 6:25 pm

Black, Sandy silt, little or no clay, heavy odor and sheen.

Star is not splitting this sample

See page 12 for location information

surface.

Daniel Benson 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. SE-13

	SAMPLE ID #	C.O.C. #
VOA	FEY80	6-017273
VOA	FEY80	6-017274
EXT	FEY80	6-017275
EXT	FEY80	6-017276
TM	MFGP43	6-017277
CYN	MFGP43	6-017278

10/22/96

2:40 → Sample taken by D. Hendricks: Approx 40' from E. Pt Neches Ave Bridge
See page 8 for additional information.

Black to dark gray clay, slight odor ^{decaying} and organic matter. Sticky. Slow recovery from core sampler.

Star is splitting sample at this location (no duplicate for Star)
Only 4 jars were filled for Star because of low sample recovery

Daniel Benson 10/22/96

Field Duplicate

Star Lake Outfall Canal

Case #25093

Station No. SE-14

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEY81	6-016951
VOA	FEY81	6-016952
EXT	FEY81	6-016953
EXT	FEY81	6-016954
TM	MFGP44	6-016955
CYN	MFGP44	6-016956

10/22/16

Live Bridge

SE-14 is field duplicate of SE-13, Obtained by D. Hendricks

Sample taken at 2:50 pm

Daniel Benson 10/22/16

Star Lake Outfall Canal

Case #25093

Station No. SE-15

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEY82	6-017279
VOA	FEY82	6-017280
EXT	FEY82	6-017281
EXT	FEY82	6-017282
TM	MFGP45	6-017283
CYN	MFGP45	6-017284

10/23/96

4:20 Approx 50' South of Pt Neckies Bridge on Star Lake
 Collected ~~and~~ by M. C. Lofte Sampled by W. Newberry

Black Silty clay, no obvious odors. Wet to very wet
 Star split sample with TNRCC. Stiff to very stiff clay
 Sample recovery was slow; enough material was composited
 to fill all sample containers. (3 cores were composited)

Daniel Benson
 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. SE-16

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEY77	6-017285
VOA	FEY77	6-017286
EXT	FEY77	6-017287
EXT	FEY77	6-017288
TM	MFGP40	6-017289
CYN	MFGP40	6-017290

10/23/96

3:50 pm Sampled by W. Newberry

SE-16 obtained in Jefferson Canal before it empties into Star Canal
 - approx 100' North of County pump station and 50' South of SE-19

Black greyey silt w/ some clay, ^(un)consolidated, chemical odor
 with silver sheen on water when core sample was removed.
 Sample was wet to very wet.

Star split sample with TNRC

Daniel Barton, 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. SE-17

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEY78	6-017291
VOA	FEY78	6-017292
EXT	FEY78	6-017293
EXT	FEY78	6-017294
TM	MFGP41	6-017295
CYN	MFGP41	6-017296

10/23/96

4:05 pm

M. Cecilete (Project Manager) indicated this sample would not be collected due to inaccessability of sample location

1 Daniel Benson 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. SE-18

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEY79	6-017343
VOA	FEY79	6-017344
EXT	FEY79	6-017345
EXT	FEY79	6-017346
TM	MEGP42	6-017347
CYN	MEGP42	6-017348

10/23/96

4:05 M. Cedeno indicated this sample would not be
collected due to inaccessability of sample location.

Daniel Benson 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. SE-19

	SAMPLE ID #	C.O.C. #
VOA	FEZ01	6-017349
VOA	FEZ01	6-017350
EXT	FEZ01	6-017351
EXT	FEZ01	6-017352
TM	MEGP61	6-017353
CYN	MEGP61	6-017354

10/23/96 3:30 SE-19 200' North of Pump station owned
by county on East bank of Star Canal and Jefferson Canal

Sampled by W. Newberry @ 3:30 pm

Black, grayey non consolidated, silty, wet, slight amount of organic material
- chemical odor, some clay

OVA reading was 0.4 ppm @ 3:30 pm

Sample depth approximately 2' below water surface

Star is splitting samples

Daniel Dawson 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. SE-20

	SAMPLE ID #	C.O.C. #
VOA	FEZ02	6-017355
VOA	FEZ02	6-017356
EXT	FEZ02	6-017357
EXT	FEZ02	6-017358
TM	MFGP62	6-017359
CYN	MFGP62	6-017360

med
Canal

10/23/96 2:30 SE-20 taken approx 200' downstream of dam on Star
Canal. Sample location from near north bank
This is a source sample. Sampled by W Dawberry

aterial

OVA reading was 1.2 ppm

Black silt, wet to very wet, slight organic odor (chemical)

See page 10 and 11 for additional location information

Star is splitting samples (without a duplicate)

Daniel Benson 10/23/96

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Field Duplicate

Star Lake Outfall Canal

Case #25093

Station No. SE-21

	<u>SAMPLE ID #</u>	<u>C.O.C. #</u>
VOA	FEZ03	6-017361
VOA	FEZ03	6-017362
EXT	FEZ03	6-017363
EXT	FEZ03	6-017364
TM	MFGP63	6-017365
CYN	MFGP63	6-017366

10/23/96

2:40 sample obtained by W. Newberry
- duplicate of SE-20. See pg. 47 for description

Daniel Benson 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. ER-01

	<u>SAMPLE ID#</u>	<u>C.O.C. #</u>
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VOA	<u>FEY95</u>	<u>6-016640</u>
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VOA	<u>FEY95</u>	<u>6-016641</u>
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EXT	<u>FEY95</u>	<u>6-016642</u>
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TM	<u>MFGP58</u>	<u>6-016643</u>
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CYN	<u>MFGP58</u>	<u>6-016644</u>
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Sample taken @ 9:20 AM

by Marshall Geddes

weather - overcast 65°F light breeze

Samples taken under metal pavilion on Hualapai property

Samples tagged and wrapped by Wes Newberry

Wes Newberry
10/23/96

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Star Lake Outfall Canal

Case #25093

Station No. FB-01

SAMPLE ID#

C.O.C. #

VOA FEY98

6-016655

VOA FEY98

6-016656

Sample taken at 9:13 AM

by Marshall Ceditore

Weather - Overcast 65°F Light breeze

Samples taken under metal pavilion on Huntersmen property

Samples tagged and wrapped by W. Newberg

W. Newberg 10-23-76

Star Lake Outfall Canal

Case #25093

Station No. ER-02

	<u>SAMPLE ID#</u>	<u>C.O.C. #</u>
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VOA	<u>FEY96</u>	<u>6-016645</u>
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VOA	<u>FEY96</u>	<u>6-016646</u>
-----	--------------	-----------------

EXT	<u>FEY96</u>	<u>6-016647</u>
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TM	<u>MFGR59</u>	<u>6-016648</u>
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CYN	<u>MFGR59</u>	<u>6-016649</u>
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Sample taken at 4:20 pm

by Debra Hendricks

weather - Sunny 80° F Light Breeze

Samples taken under metal pavillion on Hunters property

Samples tagged and wrapped by Wes Newberry

Kjmy
10-27-96

52

Star Lake Outfall Canal

Case #25093

Station No. ER-03

SAMPLE ID#

C.O.C. #

VOA FEY97

6-016650

VOA FEY97

6-016651

EXT FEY97

6-016652

TM MFGP60

6-016653

CYN MFGP60

6-016654

Time 7:25 PM

Taken by U.S. Navy

W. J. King 10/23/96

Star Lake Outfall Canal

Case #25093

Station No. FB-02SAMPLE ID#C.O.C. #VOA FEY926-016657VOA FEY926-016658Time 7:26 PMTaken by Wes NewberryWes Newberry
10-23-96

APPENDIX C



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 12-16-1996

Subject: Contract Laboratory Program Data Review

From: Melvin L. Ritter, ESAT RPO, 6MD-HC

To: B. Canellas, 6SF-RA

M. Ritter
12/16/96

Site: STAR LAKE CANAL

Case#: 25093

SDG#: MFG-P63

The EPA Region 6 Houston Branch ESAT data validation team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review and assessment report for this case.

The data package was found to be:

- () Acceptable: No major problems with data package.
- (X) Provisional: Use of data requires caution.
Data is acceptable for Regional use. Problems are noted in the review report.
- () Unacceptable: Some or all of data should not be used.
Problems are noted in the review report.

Questions regarding the data review report can be addressed to me.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. El-feky, Region 6 Data Coordinator

Files (2)



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LOCKHEED MARTIN SERVICES GROUP
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TEXAS 77074

MEMORANDUM

DATE: December 13, 1996
TO: Dr. Melvin Ritter, ESAT RPO, Region VI
FROM: Dr. Tom Chiang, ESAT ETM, Region VI
SUBJECT: CLP Data Review *Je CH NG*
REF: TDF # 6-7071A, ESAT File No. I2060

Attached is the data review summary for Case #25093
SDG #MEGP63
Site STAR LAKE CANAL

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE:

The hard copy review detected the following contractual noncompliance. The CCS report was not available at the time of this report preparation.

The data package was submitted without the contractually required custody seals (ILM04.0, Exhibit F, F-8, 2.7.14).

II. TECHNICAL/USABILITY ASSESSMENT OF DATA PACKAGE:

A total of 24 results were reviewed for this data package. The package is technically provisional for the problems summarized below.

- A. The reviewer qualified approximately 17 percent of the results because of technical problems.
- B. Matrix spike recoveries for antimony, arsenic, selenium, and thallium failed to meet QC criteria. The antimony result is unusable because the laboratory reported an antimony matrix spike recovery below 30 percent.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6

HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25093 SITE STAR LAKE CANAL
LABORATORY ARI NO. OF SAMPLES 1
CONTRACT # 68-D5-0134 MATRIX SOIL
SDG # MFGP63 REVIEWER (IF NOT ESD) ESAT
SOW# IIM04.0 REVIEWER'S NAME Linda Hoffman
ACCT # 7FAXJN10 SF # FAXUZZ COMPLETION DATE December 13, 1996

SAMPLE NO.: MFG-P63

DATA ASSESSMENT SUMMARY

	ICP	FAA	HG	CYANIDE
1. HOLDING TIMES	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
2. CALIBRATIONS	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
3. BLANKS	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
4. MATRIX SPIKES	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>
5. DUPLICATE ANALYSIS	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
6. ICP QC	<u>O</u>			
7. FAA QC		<u>O</u>		
8. LCS	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
9. SAMPLE VERIFICATION	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
10. OTHER QC	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
11. OVERALL ASSESSMENT	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>

O = Data had no problems.

M = Data qualified because of major or minor problems.

Z = Data unacceptable.

N/A = Not applicable

ACTION ITEMS: The laboratory submitted the package without custody seals.

AREAS OF CONCERN: The matrix spike recoveries for antimony, arsenic, selenium, and thallium were less than 75 percent.

NOTABLE PERFORMANCE:

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 25093 SDG MFGP63 Site STAR LAKE CANAL Lab ARI

COMMENTS: The package consisted of one soil sample for total metals and cyanide analyses by ILM04.0. The sampler designated samples MFG-P62 (from SDG MFGP43) and MFG-P63 as field duplicates. Since a QC sample was not indicated, the laboratory used sample MFG-P63 as the QC sample. The laboratory met the 35-day turnaround time requirement but submitted the package without the required custody seals. Sixty-two percent of the reported results were above the CRDL's.

The antimony result is unusable because the laboratory reported a 0.0 percent antimony matrix spike recovery. The data package is technically provisional because of problems with matrix spike recoveries. The technical usability of all reported results is indicated in the attached Data Summary Table.

An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the Evidence Inventory Checklist is attached to this report.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL AND TECHNICAL ISSUES. THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. Contractual holding time and sample preservation criteria were met. Technical holding time criteria have not been established for soil samples.
2. **Calibrations:** Acceptable. All calibrations met contractual requirements. The CRDL standard results indicated that instrument performance near the CRDL's was acceptable.
3. **Blanks:** Acceptable. Preparation and calibration blanks met contractual requirements although the laboratory reported five analytes in the blanks. Calibration and preparation blank concentrations did not affect any sample results.

Rinsates: The rinsate samples reported with SDG MFGP43 may be associated with the sample in this case, so the user needs to evaluate the associated sample results for possible contamination. The laboratory reported analyte concentrations in the rinsates below the CRDL's for eight analytes.

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 25073 SDG MEGP63 Site STAR LAKE CANAL Lab ARI

4. **Pre-digestion/Pre-distillation Matrix Spike Recovery:** Provisional. The laboratory reported matrix spike recoveries below the QC limits for antimony, arsenic, selenium, and thallium. Since the antimony recovery was less than 30 percent and antimony was undetected in the sample, the reviewer qualified this result as unusable. The reviewer qualified the arsenic, selenium, and thallium results as estimated with a low bias because of the outlying matrix spike recoveries.
5. **Duplicate Analysis:** Acceptable. The laboratory reported duplicate differences outside the SOW QC limits for aluminum, arsenic, calcium, and chromium. Since these differences met technical QC limits, the reviewer did not qualify any results.
6. **ICP Quality Control:**
 - Serial Dilution: Acceptable. The laboratory reported acceptable serial dilution differences for all analytes.
 - Interference Check Sample: Acceptable. Acceptable ICS results indicated satisfactory interelement and background correction.
 - Coefficient of Variation: Acceptable. Replicate ICP readings were consistent for all analytes.
7. **Furnace Atomic Absorption Quality Control:**
 - FAA Analytical Spike Recovery: Acceptable. The laboratory reported a thallium analytical spike recovery that was only marginally low, so the reviewer did not qualify this result.
 - Duplicate Injection Coefficient of Variation: Acceptable. Replicate instrument readings were consistent.
 - Method of Standard Addition: MSA analysis was not required.
8. **Laboratory Control Sample:** Acceptable. Acceptable LCS results indicated satisfactory sample preparation and analysis.
9. **Sample Verification:** The reviewer detected numerous reporting errors and contacted the laboratory for resubmission (see attached FAX Record Log).

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 25073 SDG MFGR63 Site STAR LAKE CANAL Lab ARI

10. Other QC:

Field Duplicate: Acceptable. Field duplicate results demonstrated satisfactory field precision.

11. Overall Assessment: The data package is technically provisional because the reviewer qualified the antimony, arsenic, selenium, and thallium results for matrix related problems.

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the inorganic data review process.

- U Undetected at the laboratory reported detection limit (IDL).
- L Reported concentration is between the IDL and the CRDL.
- J Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, FAA spike recovery, etc.
- R Result is unusable.
- F A possibility of a false negative exists.
- UC Reported concentration should be used as a raised detection limit because of apparent blank contamination.
- ^ High bias. Actual concentration may be lower than the concentration reported.
- v Low bias. Actual concentration may be higher than the concentration reported.

DATA SUMMARY

Case No.: 25093

SDG. No.: MFGP63

Reviewer: REVIEWER

Laboratory: ARI

Matrix: SOIL

Units: mg/Kg

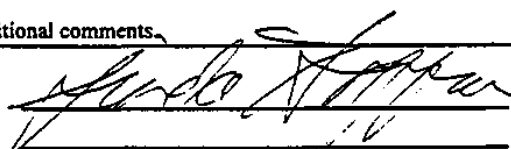
EPA TR #=>	MFG-P63	FLAG	FLAG	FLAG	FLAG	FLAG	COMMENTS
ALUMINUM	25300						
ANTIMONY	16.8 UR						
ARSENIC	14.2 Jv						
BARIUM	411						
BERYLLIUM	1.7						
CADMIUM	0.67 U						
CALCIUM	11500						
CHROMIUM	32.5						
COBALT	15.3 L						
COPPER	20.2						
IRON	36700						
LEAD	27.6						
MAGNESIUM	3990						
MANGANESE	468						
MERCURY	0.08 U						
NICKEL	19.5						
POTASSIUM	3900						
SELENIUM	1.7 UJv						
SILVER	1.0 U						
SODIUM	1670 L						
THALLIUM	2.2 LJv						
VANADIUM	76.9						
ZINC	44.5						
CYANIDE	0.42 U						
% SOLIDS	58.9						

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25093 SDG No. MEGP63 SDG Nos. To Follow _____ SAS No. _____ Date Rec 11/29/96

EPA Lab ID: <u>ARI</u> Lab Location: <u>Seattle, WA</u> Region: <u>6</u> Audit No.: <u>25093/MFGP43</u> Re_Submitted CSF? Yes _____ No <u>X</u> Box No(s): <u>1</u> COMMENTS: 1. The laboratory failed to secure the data package with the required custody seals. The laboratory was notified of this omission. 3. On Form DC-2-2, the laboratory failed to record the traffic report page numbers. The page number was omitted from the page between pages 284 and 285. The reviewer made the necessary corrections and contacted the laboratory. 4. The laboratory did not include the Form DC-1 page number on Form DC-2-2. The reviewer made the necessary correction and notified the laboratory of the omission. 20A. The laboratory submitted copies of the TR/COC and the airbill but did not indicate where the originals were located. The reviewer notified the laboratory of this omission.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">ORIGINALS</th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> <th style="text-align: center;">N/A</th> </tr> <tr> <td colspan="4">CUSTODY SEALS</td> </tr> <tr> <td>1. Present on package?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>2. Intact upon receipt?</td> <td></td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td colspan="4">FORM DC-2</td> </tr> <tr> <td>3. Numbering scheme accurate?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>4. Are enclosed documents listed?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>5. Are listed documents enclosed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">FORM DC-1</td> </tr> <tr> <td>6. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>7. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>8. Accurate?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">CHAIN-OF-CUSTODY RECORD(s)</td> </tr> <tr> <td>9. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>10. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">TRAFFIC REPORT(s) PACKING LIST(s)</td> </tr> <tr> <td>11. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>12. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">AIRBILLS/AIRBILL STICKER</td> </tr> <tr> <td>13. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>14. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>15. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">SAMPLE TAGS</td> </tr> <tr> <td>16. Does DC-1 list tags as being included?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>17. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">OTHER DOCUMENTS</td> </tr> <tr> <td>18. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>19. Legible?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>20. Original?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>20a. If "NO", does the copy indicate where original documents are located?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> </table>	ORIGINALS	YES	NO	N/A	CUSTODY SEALS				1. Present on package?		X		2. Intact upon receipt?			X	FORM DC-2				3. Numbering scheme accurate?		X		4. Are enclosed documents listed?		X		5. Are listed documents enclosed?	X			FORM DC-1				6. Present?	X			7. Complete?	X			8. Accurate?	X			CHAIN-OF-CUSTODY RECORD(s)				9. Signed?	X			10. Dated?	X			TRAFFIC REPORT(s) PACKING LIST(s)				11. Signed?	X			12. Dated?	X			AIRBILLS/AIRBILL STICKER				13. Present?	X			14. Signed?	X			15. Dated?	X			SAMPLE TAGS				16. Does DC-1 list tags as being included?	X			17. Present?	X			OTHER DOCUMENTS				18. Complete?	X			19. Legible?	X			20. Original?		X		20a. If "NO", does the copy indicate where original documents are located?		X	
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Over for additional comments.

Audited by: <u></u>	Linda Hoffman /ESAT Data Reviewer	Date <u>12/09/96</u>
Audited by: _____	_____	Date _____
Audited by: _____	_____	Date _____
Signature	Printed Name/Title	

TO BE COMPLETED BY CEAT			
Date Recvd by CEAT: _____	Date Entered: _____	Date Reviewed: _____	
Entered by: _____	_____	_____	
Reviewed by: _____	_____	_____	
Signature	Printed Name/Title		

DC-2__

In Reference to
Case 25093/SDG MFGP63
Page 1 of 2 pages
ESAT File No.: I2060

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

FAX Record Log

Date of FAX: December 13, 1996

Laboratory Name: ARI

Lab Contact: Jeff Reitan

Region: 6

Regional Contact: Linda Hoffman (ESAT)

FAX Initiated by: Region

In reference to data for the following sample number(s):

All samples in this SDG.

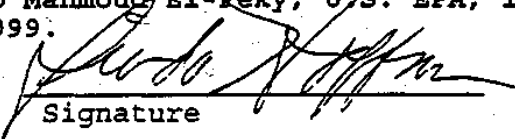
Summary of Questions/Issues:

1. The data package was submitted without the contractually required custody seals (ILM04.0, Exhibit F, F-8, 2.7.14). Please explain this contractual noncompliance.
2. The traffic report page number was not recorded on Form DC-2-2, Item #26. The SOW (ILM04.0, Exhibit B, B-42, U, 2nd paragraph) states, "Inventory the CSF by reviewing the document numbers and recording page number ranges in the column provided on Form DC-2." Since the TR/COC are on the same document, the SOW requires the traffic report page numbers to be recorded on Form DC-2-2. Please acknowledge and note for the future that the traffic report page number must be recorded under Item #26.
3. The traffic report and airbill were copies but the location of the original documents was not indicated (ILM04.0, Exhibit F, F-7, 2.7.9). Please resubmit pages 248 and 249 with the appropriate notations initialed and dated.
4. For your information, soil samples do not require aluminum and iron matrix spike analyses (ILM04.0, Exhibit E, E-23, Table 3).

In Reference to
Case 25093/SDG MFGP63
Page 2 of 2 pages
ESAT File No.: I2060

5. On Form 4 (pp. 26 and 27), all analytes analyzed by ICP were not recorded for "Initial/Final Sol. A". The SOW (ILM04.0, Exhibit B, B-26 and B-27, Paragraphs beginning "Under 'Initial Found Sol. A' and "Under 'Final Found Sol. A'" and Exhibit E, E-20, 5, 2nd paragraph) states analytes for all wavelengths used for each analyte reported by ICP must be recorded on Form 4 (starting with Solution A). Please make the necessary corrections to pages 26 and 27 and resubmit.
6. In the lead instrument raw data, time of analysis was not recorded for the initial and continuing calibration verifications and blanks (ILM04.0, Exhibit B, d, B-11, #9). Please add the time of each ICV, ICB, CCV, and CCB analysis to the lead raw data and resubmit.
7. Please explain why the ICV/CCV concentrations in the cyanide raw data do not agree with the concentrations reported on the Form 2's and make any necessary corrections and resubmissions.

The EPA expects the laboratory to look into items and submit data within seven days to Mahmoud El-Feky, U.S. EPA, 10625 Fallstone Road, Houston TX 77099.


Signature

12/13/96
Date

Distribution: (1) Lab Copy, (2) Region Copy

Lockheed Martin Services Group
ESAT Region 6

10101 S. W. Freeway, Suite 500, Houston, TX 77074 TEL: (713) 988-2983

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Jeff Reitan

Firm ARI

City Seattle State WA

Telephone 206-621-6490 Ext. _____

FAX Telephone No. 206-621-7523 Ext. _____

Sender:

Name Linda Hoffman ESAT

Date 12/13/96 Time _____

Total Number of pages including this Cover Sheet 3

If you do not receive all the pages or if any pages are unclear,
please call: (713) 988-2983.

MESSAGES: _____

FAX No. (713) 988-2994

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP63

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP63

Matrix (soil/water): SOIL Lab Sample ID: 5369A

Level (low/med): LOW Date Received: 10/25/96

% Solids: 58.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	25300	-	*	P
7440-36-0	Antimony	16.8	U	N	P
7440-38-2	Arsenic	14.2	-	N*	F
7440-39-3	Barium	411	-		P
7440-41-7	Beryllium	1.7	-		P
7440-43-9	Cadmium	0.67	U		P
7440-70-2	Calcium	11500	-	*	P
7440-47-3	Chromium	32.5	-	*	P
7440-48-4	Cobalt	15.3	B		P
7440-50-8	Copper	20.2	-		P
7439-89-6	Iron	36700	-		P
7439-92-1	Lead	27.6	-		F
7439-95-4	Magnesium	3990	-		P
7439-96-5	Manganese	468	-		P
7439-97-6	Mercury	0.08	U		CV
7440-02-0	Nickel	19.5	-		P
7440-09-7	Potassium	3900	-		P
7782-49-2	Selenium	1.7	U	WN	F
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	1670	B		P
7440-28-0	Thallium	2.2	B	N	F
7440-62-2	Vanadium	76.9	-		P
7440-66-6	Zinc	44.5	-		P
	Cyanide	0.42	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

000006 ELM04.0



United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

Case No.

25093

1. Project Code 25093	Account Code 15	2. Region No. VI	Sampling Co. TNRLC	4. Date Shipped 10/22/96	Carrier MOTOR
Regional Information		3. Sampler (Name) DEBRA D. HENDRICKS		Airbill Number 860-445-0376	
Non-Superfund Program		Sampler Signature Debra D. Hendricks		5. Ship To SEALED TO AVOID CONTAMINATION	
Site Name Star Lake Canal		3. Purpose <input checked="" type="checkbox"/> Early Action <input type="checkbox"/> Long Term Action		6. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	
City/State Riverside, CA		Lead <input type="checkbox"/> SF <input type="checkbox"/> PRP <input checked="" type="checkbox"/> ST <input type="checkbox"/> FED		7. Preservative (Enter in Column D) 1. HCl 2. HNO3 3. NaOH 4. H2SO4 5. K2Cr2O7 6. Ice only 7. Other (Specify in Column D) N. Not preserved	

CLP Sample Numbers (from labels)	A Matrix (from Box 6) Other:	B Conc. Low-Med-High	C Sample Type: Comp/Grab	D Preservative (from Box 7) Other:	E - RAS Analysis Dist. Metals Total Metals Cyanide NO ₂ /NO ₃ Fluoride pH Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier Blank = B Duplicate = D Performance = PE Not a QC Sample = N
MF6P5-8	5	Low	Grab	2/3/6	XX	6-016643-417	FEY-01	10/22/96 920	FEY95	MC	R
MF6P5-5	5	Low	Grab	6	XX	6-016643-164	SEY-01	10/22/96 10:40	FEY92	DH	
MF6P5-6	5	Low	Grab	6	XX	6-016643-220	SEY-02	10/22/96 11:15	FEY97	DH	
MF6P5-7	5	Low	Grab	6	XX	6-016643-272	SEY-03	10/22/96 12:00	FEY94	DH	
MF6P5-2	5	Low	Grab	6	XX	6-016643-382	SEY-04	10/22/96 12:34	FEY89	DH	
MF6P5-13	5	Low	Grab	6	XX	6-016643-578	SEY-13	10/22/96 14:40	FEY80	DH	
MF6P5-14	5	Low	Grab	6	XX	6-016643-555	SEY-14	10/22/96 14:50	FEY81	DH	D(MF6P5-13)
MF6P5-9	4	Low	Grab	2/3/6	XX	6-016643-349	SEY-02	10/22/96 16:20	FEY96	DH	R

Shipment for Case Complete? <input checked="" type="checkbox"/>	Page 1 of 1	Sample(s) to be Used for Laboratory QC MF6P5-2	Additional Sampler Signatures [Signature]	Chain of Custody Seal Number(s)
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Relinquished by: (Signature) [Signature]	Date / Time 10/22/96 5:45	Received by: (Signature) [Signature]	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

DISTRIBUTION:

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Yellow - Lab Copy for Return to CLASS

EPA Form 8110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

369014



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 12-16-1996

Subject: Contract Laboratory Program Data Review

From: Melvin L. Ritter, ESAT RPO, 6MD-HC

To: B. Canellas, 6SF-RA

M. Ritter
12/16/96

Site: STAR LAKE CANAL

Case#: 25093

SDG#: MFG-P43

The EPA Region 6 Houston Branch ESAT data validation team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review and assessment report for this case.

The data package was found to be:

- () Acceptable: No major problems with data package.
- (X) Provisional: Use of data requires caution.
Data is acceptable for Regional use. Problems are noted in the review report.
- () Unacceptable: Some or all of data should not be used.
Problems are noted in the review report.

Questions regarding the data review report can be addressed to me.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. El-feky, Region 6 Data Coordinator

Files (2)



Recycled/Recyclable
Printed with Soy/Candle Ink on paper that
contains at least 50% recycled fiber



Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

Case No.

25093

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
		VI	TNRCC	10/24/96	AIRBORNE EXPRESS	1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (specify in Column A)	1. HCl 2. HNO ₃ 3. NaOH 4. H ₂ SO ₄ 5. K ₂ Cr ₂ O ₇ 6. Ice only 7. Other (specify in Column D) N. Not preserved
Regional Information		Sampler (Name)	Airbill Number				
		West Newberry	9-862-445-0691				
Non-Superfund Program		Sampler Signature	5. Ship To				
		<i>[Signature]</i>	ANALYTICAL RESOURCES INC 400 9TH AVE NORTH SEATTLE WA 98109 ATTN: TAY KUM (206) 637-4490				
Site Name		3. Purpose					
STAR LAKE CANAL		Early Action CLEM PA REM RI SI ESI					
Site Spill ID		Long-Term Action FS RD FA O&M NDI					

[illegible]

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
FOY Complete?	12/12			

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>[Signature]</i>	10/24/96 8:40 AM	<i>[Signature]</i>	<i>[Signature]</i>		<i>[Signature]</i>
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>[Signature]</i>		<i>[Signature]</i>	<i>[Signature]</i>		<i>[Signature]</i>
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	
<i>[Signature]</i>		<i>[Signature]</i>			

DISTRIBUTION: Green - Region Copy
White - Lab Copy for Return to Region

Pink - CLASS Copy
Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

21-013-13 BEV

100-443887-1

000650

365232

LOCKHEED MARTIN SERVICES GROUP
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TEXAS 77074

MEMORANDUM

Page 1 of 2 pages

DATE: December 13, 1996
TO: Dr. Melvin Ritter, ESAT RPO, Region VI
FROM: Dr. Tom Chiang, ESAT ETM, Region VI
SUBJECT: CLP Data Review *J. C. H. 4/90*
REF: TDF # 6-7073A, ESAT File No. I2059

Attached is the data review summary for Case #25093
SDG #MFGP43
Site STAR LAKE CANAL

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE:

The hard copy review detected the following contractual noncompliances. The CCS report was not available at the time of this report preparation.

- A. The data package was submitted without the contractually required custody seals.
- B. The laboratory made incorrect dilutions to selenium samples MFG-P44 and MFG-P45 when the analytical spike recoveries were below 40 percent (Exhibit E, E-30, 13.b.1). As a result, the reviewer qualified these two selenium results.
- C. The laboratory submitted the data package 2 days late for the 35-day turnaround time requirement.

II. TECHNICAL/USABILITY ASSESSMENT OF DATA PACKAGE:

A total of 480 results were reviewed for this data package. The package is technically provisional for the problems summarized below.

- A. The reviewer qualified approximately nine percent of the results because of technical problems.

LOCKHEED MARTIN SERVICES GROUP
10101 SOUTHWEST FREEWAY, SUITE 500
HOUSTON, TEXAS 77074

MEMORANDUM

Page 2 of 2 pages

Attached is the data review summary for Case #25093
SDG #MEGP43
Site STAR LAKE CANAL

COMMENTS, continued:

- B. Matrix spike recoveries for antimony and selenium failed to meet QC criteria. The antimony results are unusable because the laboratory reported an antimony matrix spike recovery below 30 percent.
- C. FAA analytical spike recoveries for one arsenic, ten selenium and six thallium analyses failed to meet QC criteria.



United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report
& Chain of Custody Record
(For Inorganic CLP Analysis)

Case No.

25093

1. Project Code 25093	Account Code	2. Region No. VI	Sampling Co. TNRLO	4. Date Shipped 10/22/96	Carrier	6. Matrix (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	7. Preservative (Enter in Column D) 1. HCl 2. HNO3 3. NaOH 4. H2SO4 5. K2Cr2O7 6. Ice only 7. Other (Specify in Column D) N. Not preserved
Regional Information		3. Sampler (Name) DEBRA D. HENDRICKS		Airbill Number 862-445-0376			
Non-Superfund Program		Sampler Signature Debra D. Hendricks		5. Ship To Seattle, WA 98104			
Site Name Star Lake Canal		3. Purpose Early Action Lead <input type="checkbox"/> SF <input type="checkbox"/> PRP <input checked="" type="checkbox"/> ST <input type="checkbox"/> FED CLEM REM RI SI ESI		Long-Term Action FS RD RA O&M NPLD			
City/State Riverside, CA		Site Spill ID		ATTN: [illegible] 621-6490			

CLP Sample Numbers (from labels)	A Matrix (from Box 6)	B Conc. Low-Med-High	C Sample Type: Comp./Grab	D Preservative (from Box 7)	E RAS Analysis	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier
MF6P5-8	5	Low	Grab	4/3/6	XX	6-016643-149	FEY-01	10/22/96 920	FEY95	mc	R
MF6P5-3	5	Low	Grab	6	XX	6-016643-164	SEY-01	10/22/96 10:40	FEY92	OH	
MF6P5-6	5	Low	Grab	6	XX	6-016643-20	SEY-02	10/22/96 11:15	FEY93	OH	
MF6P5-7	5	Low	Grab	6	XX	6-016643-77	SEY-03	10/22/96 1200	FEY94	OH	
MF6P5-2	5	Low	Grab	6	XX	6-016643-82	SEY-04	10/22/96 1234	FEY89	OH	
MF6P5-13	5	Low	Grab	6	XX	6-016643-175	SEY-13	10/22/96 1440	FEY80	OH	
MF6P5-14	5	Low	Grab	6	XX	6-016643-55	SEY-14	10/22/96 1450	FEY81	OH	D(MF6P5-13)
MF6P5-9	4	Low	Grab	4/3/6	XX	6-016643-49	SEY-02	10/22/96 1620	FEY96	OH	R

Shipment for Case Complete? (Y/N)	Page 1 of 1	Sample(s) to be Used for Laboratory QC MF6P5-2	Additional Sampler Signatures [Signature]	Chain of Custody Seal Number(s)
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Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[Signature]	10/22/96 5:45	[Signature]			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

DISTRIBUTION: Green - Region Copy
White - Lab Copy for Return to Region

Pink - CLASS Copy
Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

369014



United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report & Chain of Custody Record (For Inorganic CLP Analysis)

Case No.

25093

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier	6. Matrix (Enter in Column A)	7. Preservative (Enter in Column D)
VI	TNRCC	VI	TNRCC	10/23/96	AIRBORNE Express	1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	1. HCl 2. HNO ₃ 3. NaOH 4. H ₂ SO ₄ 5. K ₂ Cr ₂ O ₇ 6. Ice only 7. Other (Specify in Column D) N. Not preserved
Regional Information		Sampler (Name)		Airbill Number			
North Superfund Program		Sampler Signature		Ship To			
Site Name		3. Purpose		ANALYTICAL RESOURCES, INC.			
STAR LAKE CANAL		Early Action		4009 PINE AVE NORTH			
City/State		Lead		SEATTLE WA 98109			
RIVERVIEW TX		PRP		ATTN: JAY RUDIN (206) 621-6470			
Site Spill ID		SI					
		FED					
		ESI					
		NPLD					
CLP Sample Numbers (from labels)	Matrix (from Box 6)	Conc. Low Med High	Sample Type: Comp/Grab	D	E - RAS Analysis	Station Location Identifier	Corresponding CLP Organic Sample No.
MEEP-38	5	LOW	GRAB	6	XX	SE-05	10/23/96 10:10 FEY90
MEEP-19	5	LOW	GRAB	6	XX	SE-07	10/23/96 11:05 FEY86
MEEP-50	5	LOW	GRAB	6	XX	SE-08	10/23/96 11:40 FEY87
MEEP-51	5	LOW	GRAB	6	XX	SE-09	10/23/96 12:20 FEY88
MEEP-61	5	LOW	GRAB	6	XX	SE-19	10/23/96 15:30 FEZ01
MEEP-95	5	LOW	GRAB	6	XX	SE-15	10/23/96 16:20 FEY82
MEEP-20	5	LOW	GRAB	6	XX	SE-16	10/23/96 15:50 FEY77
MEEP-02	5	LOW	GRAB	6	XX	SE-20	10/23/96 14:30 FEZ02
MEEP-03	5	LOW	GRAB	6	XX	SE-21	10/23/96 14:40 FEZ03
MEEP-62	5	LOW	Comp	6	XX	SE-20	10/23/96 14:30 FEZ02
Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC		Additional Sampler Signatures		Chain of Custody Seal Number(s)	
Y	1 of 2			Markell C. R.			

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Markell C. R.	10/24/96 8:00 AM				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

DISTRIBUTION: Green - Region Copy
White - Lab Copy for Return to Region

Pink - CLASS Copy
Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25093 SITE STAR LAKE CANAL
LABORATORY ARI NO. OF SAMPLES 20
CONTRACT # 58-D5-0134 MATRIX 3 WATER/17 SOIL
SDG # MFGP43 REVIEWER (IF NOT ESD) ESAT
SOW# ILM04.0 REVIEWER'S NAME Linda Hoffman
ACCT # 7FAXJN10 SF # FAXUZZ COMPLETION DATE December 13, 1996

SAMPLE NO.:	MFG-P40	MFG-P46	MFG-P50	MFG-P55	MFG-P59
	MFG-P43	MFG-P47	MFG-P51	MFG-P56	MFG-P60
	MFG-P44	MFG-P48	MFG-P52	MFG-P57	MFG-P61
	MFG-P45	MFG-P49	MFG-P53	MFG-P58	MFG-P62

DATA ASSESSMENT SUMMARY

	ICP	FAA	HG	CYANIDE
1. HOLDING TIMES	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
2. CALIBRATIONS	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
3. BLANKS	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
4. MATRIX SPIKES	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>
5. DUPLICATE ANALYSIS	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
6. ICP QC	<u>M</u>			
7. FAA QC		<u>M</u>		
8. LCS	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
9. SAMPLE VERIFICATION	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
10. OTHER QC	<u>O</u>	<u>O</u>	<u>O</u>	<u>O</u>
11. OVERALL ASSESSMENT	<u>M</u>	<u>M</u>	<u>O</u>	<u>O</u>

O = Data had no problems.

M = Data qualified because of major or minor problems.

Z = Data unacceptable.

N/A= Not applicable

ACTION ITEMS: The laboratory submitted the package two days late without custody seals and made incorrect sample dilutions.

AREAS OF CONCERN: The matrix spike recoveries for antimony and selenium were less than 75 percent. One arsenic, ten selenium, and six thallium analyses failed to meet FAA QC criteria. One nickel analysis had a coefficient of variation greater than 20 percent.

NOTABLE PERFORMANCE:

**INORGANIC QA REVIEW
CONTINUATION PAGE**

Case 25093 SDG MFGP43 Site STAR LAKE CANAL Lab ARI

COMMENTS: The package consisted of 17 soil and 3 water samples for total metals and cyanide analyses by ILM04.0. The sampler designated samples MFG-P43/MFG-P44 and MFG-P62/MFG-P63 (from SDG MFGP63) as field duplicate pairs and sample MFG-P52 as the QC sample. The three water samples were listed as rinsate samples. The laboratory did not meet the 35-day turnaround time requirement, submitted the package without custody seals, and made incorrect dilutions to two selenium samples. Forty-seven percent of the reported results were above the CRDL's.

All antimony results are unusable because the antimony matrix spike was 19.2 percent. The data package is technically provisional because of problems with matrix and FAA analytical spike recoveries and replicate instrument readings. The technical usability of all reported results is indicated in the attached Data Summary Table.

An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the Evidence Inventory Checklist is attached to this report.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL AND TECHNICAL ISSUES. THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. Contractual holding time and sample preservation criteria were met. Technical holding time criteria have not been established for soil samples.
2. **Calibrations:** Acceptable. All calibrations met contractual requirements. The CRDL standard results indicated that instrument performance near the CRDL's was acceptable.
3. **Blanks:** Acceptable. Preparation and calibration blanks met contractual requirements although the laboratory reported six analytes in the blanks. Calibration and preparation blank concentrations only affected results below the CRDL's.

Rinsates: The laboratory reported analyte concentrations below the CRDL's for eight analytes. The user needs to evaluate the associated sample results for possible contamination.

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 25073 SDG MFGP43 Site STAR LAKE CANAL Lab ARI

4. **Pre-digestion/Pre-distillation Matrix Spike Recovery:** Provisional. The laboratory reported matrix spike recoveries below the QC limits for antimony and selenium. Since the antimony recovery was less than 30 percent and antimony was undetected in the samples, the reviewer qualified these results as unusable. The reviewer qualified the selenium results as estimated with a low bias because of the outlying selenium recovery.

5. **Duplicate Analysis:** Acceptable. The laboratory demonstrated satisfactory laboratory precision as seen by acceptable duplicate differences.

6. **ICP Quality Control:**

Serial Dilution: Acceptable. The laboratory reported acceptable serial dilution differences for all analytes.

Interference Check Sample: Acceptable. Acceptable ICS results indicated satisfactory interelement and background correction.

Coefficient of Variation: Provisional. Replicate ICP readings were inconsistent for nickel in sample MFG-P50, so the reviewer qualified this result as estimated.

7. **Furnace Atomic Absorption Quality Control:**

FAA Analytical Spike Recovery: Provisional. The laboratory reported analytical spike recoveries below the QC limits for the following samples that the reviewer qualified as estimated with a low bias:

arsenic in sample MFG-P45;

selenium in samples MFG-P40, MFG-P44, MFG-P45, MFG-P46, MFG-P47, MFG-P52, MFG-P53, MFG-P55, MFG-P57, and MFG-P62; and

thallium in samples MFG-P43, MFG-P44, MFG-P50, MFG-P51, MFG-P55, and MFG-P57.

The analytical spike recoveries for lead in sample MFG-P58 and thallium in samples MFG-P59 and MFG-P60 were only marginally low, so the reviewer did not qualify these results.

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 25073 SDG MEDG43 Site STAR LAKE CANAL Lab ARI

7. Furnace Atomic Absorption Quality Control, continued:

Duplicate Injection Coefficient of Variation: Acceptable.
Replicate instrument readings were consistent.

Method of Standard Addition: MSA analysis was not required.

8. Laboratory Control Sample: Acceptable. Acceptable LCS results indicated satisfactory sample preparation and analysis.

9. Sample Verification: The reviewer detected numerous reporting errors and contacted the laboratory for resubmission (see attached FAX Record Log).

10. Other QC:

Field Duplicate: Acceptable. Field duplicate results demonstrated satisfactory field precision.

11. Overall Assessment: The data package is technically provisional for the following reasons.

The reviewer qualified one arsenic, all antimony and selenium, and six thallium results because of matrix related problems.

The reviewer qualified one nickel result because of inconsistent ICP readings.

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the inorganic data review process.

- U Undetected at the laboratory reported detection limit (IDL).
- L Reported concentration is between the IDL and the CRDL.
- J Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, FAA spike recovery, etc.
- R Result is unusable.
- F A possibility of a false negative exists.
- UC Reported concentration should be used as a raised detection limit because of apparent blank contamination.
- ^ High bias. Actual concentration may be lower than the concentration reported.
- v Low bias. Actual concentration may be higher than the concentration reported.

Case No.: 25093
Laboratory: ARI

DATA SUMMARY
SDG. No.: MFGP43
Matrix: SOIL

Reviewer: L. Hoffman
Units: mg/Kg

EPA TR #-->	FLAG MFG-P40	FLAG MFG-P43	FLAG MFG-P44	FLAG MFG-P45	FLAG MFG-P46	COMMENTS
ALUMINUM	34700	30400	26500	43400	32900	
ANTIMONY	21.7 UR	18.8 UR	18.9 UR	19.2 UR	23.3 UR	
ARSENIC	3.1 L	1.5 L	1.5 L	0.41 UJv	6.6	
BARIUM	163	142	155	297	94.2	
BERYLLIUM	1.4 L	1.6 L	1.4 L	1.9 L	1.6 L	
CADMIUM	0.87 U	0.75 U	0.77 L	0.77 U	0.93 U	
CALCIUM	38400	5210	4490	6900	4410	
CHROMIUM	51.0	31.4	28.7	40.8	35.7	
COBALT	9.7 L	10.1 L	4.8 L	5.1 L	13.6 L	
COPPER	106	19.1	16.3	29.5	19.5	
IRON	24200	16800	15200	19400	37300	
LEAD	46.8	23.6	20.2	19.9	26.5	
MAGNESIUM	6860	5940	5730	6910	9200	
MANGANESE	308	116	102	186	2780	
MERCURY	0.23	0.09 U	0.09 U	0.10 L	0.10 U	
NICKEL	19.0	17.2	12.1 L	21.6	29.9	
POTASSIUM	2480	3690	3600	4750	5540	
SELENIUM	0.42 UJv	1.9 UJv	0.76 UJv	0.81 UJv	0.50 UJv	
SILVER	1.3 U	1.1 U	1.1 U	1.2 U	1.4 U	
SODIUM	1920 L	2830	2610	4140	4880	
THALLIUM	3.3 L	0.81 LJv	0.64 LJv	2.6 L	3.3 L	
VANADIUM	56.9	53.5	50.6	59.3	62.0	
ZINC	96.7	74.4	53.5	56.4	94.3	
CYANIDE	1.5	0.49 U	0.49 U	0.50 U	0.62 U	
% SOLIDS	43.9	50.1	51.4	49.2	39.8	

Case No.: 25093
Laboratory: ARI

DATA SUMMARY
SDG. No.: MFGP43
Matrix: SOIL

Reviewer: L. Hoffman
Units: mg/Kg

EPA TR #=>	FLAG	FLAG	FLAG	FLAG	FLAG	COMMENTS
	MFG-P47	MFG-P48	MFG-P49	MFG-P50	MFG-P51	
ALUMINUM	21700	28500	25100	27800	22500	
ANTIMONY	26.4 UR	20.5 UR	19.2 UR	19.6 UR	25.2 UR	
ARSENIC	7.0	11.5	1.2 L	1.7 L	3.2 L	
BARIUM	109	100	114	116	128	
BERYLLIUM	1.2 L	1.5 L	1.6 L	1.7 L	1.6 L	
CADMIUM	1.1 U	0.82 U	0.77 U	0.78 U	1.0 U	
CALCIUM	47200	3390	3250	3150	6030	
CHROMIUM	70.1	32.4	26.7	29.0	24.7	
COBALT	9.1 L	17.4 L	6.1 L	5.0 L	4.7 L	
COPPER	143	22.9	14.8	14.6	16.0	
IRON	21700	25000	17000	17100	14300	
LEAD	89.2	24.6	21.3	21.1	17.8	
MAGNESIUM	14300	6860	7050	7540	8000	
MANGANESE	598	223	110	143	133	
MERCURY	1.6	0.10 U	0.10 U	0.09 U	0.13 U	
NICKEL	27.5	27.5	16.1	16.6 J	17.4 L	
POTASSIUM	2490 L	4680	4760	4790	4290	
SELENIUM	0.53 UJv	2.1 UJv	1.9 UJv	2.0 UJv	2.7 UJv	
SILVER	1.6 U	1.2 U	1.2 U	1.2 U	1.5 U	
SODIUM	3700	3640	5360	5980	5890	
THALLIUM	2.6 U	2.1 L	2.5 L	0.93 LJv	1.2 LJv	
VANADIUM	42.2	53.4	47.1	48.6	44.2	
ZINC	120	73.5	66.4	58.1	50.4	
CYANIDE	4.3	0.54 U	0.52 U	0.53 U	0.67 U	
† SOLIDS	34.4	45.6	48.2	46.9	36.4	

Case No.: 25093
Laboratory: ARI

DATA SUMMARY
SDG. No.: MFGP43
Matrix: SOIL

Reviewer: L. Hoffman
Units: mg/Kg

EPA TR #=>	FLAG MFG-P52	FLAG MFG-P53	FLAG MFG-P55	FLAG MFG-P56	FLAG MFG-P57	COMMENTS
ALUMINUM	5930	15300	20000	1650	13900	
ANTIMONY	13.5 UR	13.8 UR	22.8 UR	13.3 UR	14.2 UR	
ARSENIC	2.0 L	4.7	3.9 L	0.75 L	3.8	
BARIUM	30.6 L	57.1	61.8 L	9.8 L	60.0	
BERYLLIUM	0.36 L	1.0 L	0.95 L	0.27 U	0.89 L	
CADMIUM	0.54 U	0.55 U	0.91 U	0.53 U	0.57 U	
CALCIUM	837 L	1740	1500 B	204 L	1070 L	
CHROMIUM	6.5	18.7	20.3	3.2	15.1	
COBALT	2.1 L	12.9 L	5.4 L	1.4 L	7.4 L	
COPPER	5.3 L	12.1	13.9	2.7 LUC	8.2	
IRON	5360	21400	14700	1740	15200	
LEAD	8.7	15.9	47.4	12.0	14.4	
MAGNESIUM	1510	5080	4560	490 L	3560	
MANGANESE	41.0	1170	98.6	18.0	136	
MERCURY	0.07 U	0.06 U	0.17 L	0.07 U	0.07 U	
NICKEL	4.4 L	21.6	12.7 L	3.0 L	13.5	
POTASSIUM	906 L	3720	2800	228 L	2490	
SELENIUM	0.27 UJv	0.27 UJv	0.47 UJv	0.27 UJv	0.29 UJv	
SILVER	0.81 U	0.83 U	1.4 U	0.80 U	0.85 U	
SODIUM	1460	3040	5370	1100 L	2930	
THALLIUM	0.27 L	2.1 L	0.81 LJv	0.27 U	0.65 LJv	
VANADIUM	12.4 L	29.8	39.0	3.9 L	29.0	
ZINC	17.4	58.3	46.8	8.9	41.3	
CYANIDE	0.34 U	0.35 U	0.59 U	0.34 U	0.38 U	
% SOLIDS	72.6	70.9	42.2	73.5	65.3	

Case No.: 25093
Laboratory: ARI

DATA SUMMARY
SDG. No.: MFGP43
Matrix: SOIL

Reviewer: L. Hoffman
Units: mg/Kg

EPA TR #=>	FLAG MFG-P61	FLAG MFG-P62	FLAG	FLAG	FLAG	COMMENTS
ALUMINUM	28800	23200				
ANTIMONY	21.6 UR	15.8 UR				
ARSENIC	1.9 L	21.0				
BARIUM	179	436				
BERYLLIUM	1.5 L	1.8				
CADMIUM	0.86 U	0.63 U				
CALCIUM	24700	13700				
CHROMIUM	46.0	29.7				
COBALT	6.3 L	15.1 L				
COPPER	67.1	16.1				
IRON	17300	35200				
LEAD	63.5	31.6				
MAGNESIUM	6400	3500				
MANGANESE	181	491				
MERCURY	0.76	0.08 U				
NICKEL	15.2 L	18.3				
POTASSIUM	3390	3240				
SELENIUM	2.1 UJv	0.33 UJv				
SILVER	1.3 U	0.95 U				
SODIUM	3100	1700				
THALLIUM	2.1 U	3.3 L				
VANADIUM	47.8	71.1				
ZINC	93.4	40.8				
CYANIDE	0.55 U	0.42 U				
% SOLIDS	45.0	59.1				

Case No.: 25093
Laboratory: ARI

DATA SUMMARY
SDG. No.: MFGP43
Matrix: WATER

Reviewer: L. Hoffman
Units: ug/L

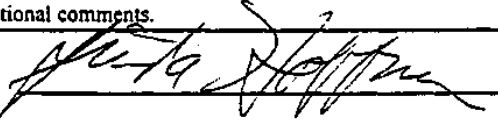
EPA TR #=>	FLAG	FLAG	FLAG	FLAG	FLAG	COMMENTS
	MFG-P58	MFG-P59	MFG-P60			
ALUMINUM	27.3 LUC	27.7 LUC	26.8 L			
ANTIMONY	50.0 U	50.0 U	50.0 U			
ARSENIC	1.0 U	1.0 U	1.0 U			
BARIUM	1.0 U	1.0 U	1.0 U			
BERYLLIUM	1.0 U	1.0 U	1.0 U			
CADMIUM	2.0 U	2.0 U	2.0 U			
CALCIUM	39.5 L	32.3 L	29.4 L			
CHROMIUM	5.0 U	5.0 U	5.0 U			
COBALT	3.0 U	3.0 U	3.0 U			
COPPER	3.5 LUC	2.8 LUC	2.8 LUC			
IRON	58.1 L	20.0 U	20.0 U			
LEAD	1.0 U	1.4 LUC	1.3 LUC			
MAGNESIUM	25.0 U	25.0 U	25.0 U			
MANGANESE	5.0 L	1.0 U	1.0 U			
MERCURY	0.10 U	0.10 U	0.10 U			
NICKEL	10.0 U	10.0 U	10.0 U			
POTASSIUM	500 U	500 U	500 U			
SELENIUM	1.0 U	1.0 U	1.0 U			
SILVER	3.0 U	3.0 U	3.0 U			
SODIUM	86.7 L	78.0 L	59.1 L			
THALLIUM	1.0 U	1.0 U	1.0 U			
VANADIUM	2.0 U	2.0 U	2.0 U			
ZINC	15.1 LUC	4.1 LUC	4.0 U			
CYANIDE	5.0 U	5.0 U	5.0 U			

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. **25093** SDG No. **MFGP43** SDG Nos. To Follow SAS No. Date Rec **11/29/96**

EPA Lab ID: <u>ARI</u> Lab Location: <u>Seattle, WA</u> Region: <u>6</u> Audit No.: <u>25093/MFGP43</u> Re_Submitted CSF? Yes <u> </u> No <u>X</u> Box No(s): <u>1</u> COMMENTS: 1. The laboratory failed to secure the data package with the required custody seals. The laboratory was notified of this omission. 3. On Form DC-2-2, the laboratory failed to record the traffic report page numbers. The page number was omitted from the page between pages 284 and 285. The reviewer made the necessary corrections and contacted the laboratory.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">ORIGINALS</th> <th>YES</th> <th>NO</th> <th>N/A</th> </tr> <tr> <td colspan="4">CUSTODY SEALS</td> </tr> <tr> <td>1. Present on package?</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>2. Intact upon receipt?</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td colspan="4">FORM DC-2</td> </tr> <tr> <td>3. Numbering scheme accurate?</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>4. Are enclosed documents listed?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>5. Are listed documents enclosed?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">FORM DC-1</td> </tr> <tr> <td>6. Present?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>7. Complete?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>8. Accurate?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">CHAIN-OF-CUSTODY RECORD(s)</td> </tr> <tr> <td>9. Signed?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>10. Dated?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">TRAFFIC REPORT(s) PACKING LIST(s)</td> </tr> <tr> <td>11. Signed?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>12. Dated?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">AIRBILLS/AIRBILL STICKER</td> </tr> <tr> <td>13. Present?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>14. Signed?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>15. Dated?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">SAMPLE TAGS</td> </tr> <tr> <td>16. Does DC-1 list tags as being included?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>17. Present?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td colspan="4">OTHER DOCUMENTS</td> </tr> <tr> <td>18. Complete?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>19. Legible?</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>20. Original?</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>20a. If "NO", does the copy indicate where original documents are located?</td> <td>X</td> <td></td> <td></td> </tr> </table>	ORIGINALS	YES	NO	N/A	CUSTODY SEALS				1. Present on package?		X		2. Intact upon receipt?			X	FORM DC-2				3. Numbering scheme accurate?		X		4. Are enclosed documents listed?	X			5. Are listed documents enclosed?	X			FORM DC-1				6. Present?	X			7. Complete?	X			8. Accurate?	X			CHAIN-OF-CUSTODY RECORD(s)				9. Signed?	X			10. Dated?	X			TRAFFIC REPORT(s) PACKING LIST(s)				11. Signed?	X			12. Dated?	X			AIRBILLS/AIRBILL STICKER				13. Present?	X			14. Signed?	X			15. Dated?	X			SAMPLE TAGS				16. Does DC-1 list tags as being included?	X			17. Present?	X			OTHER DOCUMENTS				18. Complete?	X			19. Legible?	X			20. Original?		X		20a. If "NO", does the copy indicate where original documents are located?	X		
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Over for additional comments.

Audited by: 	Linda Hoffman /ESAT Data Reviewer	Date <u>12/03/96</u>
Audited by: _____	_____	Date _____
Audited by: _____	_____	Date _____

Signature

Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____	Date Entered: _____	Date Reviewed: _____
Entered by: _____	_____	_____
Reviewed by: _____	_____	_____

Signature

Printed Name/Title

DC-2__

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

FAX Record Log

Date of FAX: December 13, 1996

Laboratory Name: ARI

Lab Contact: Jeff Reitan

Region: 6

Regional Contact: Linda Hoffman (ESAT)

FAX Initiated by: Region

In reference to data for the following sample number(s):

All samples in this SDG.

Summary of Questions/Issues:

1. The data package was submitted without the contractually required custody seals (ILM04.0, Exhibit F, F-8, 2.7.14). Please explain this contractual noncompliance.
2. Contractually noncompliant dilutions (2X) were made to samples MFG-P44 and MFG-P45 for the selenium analyses. The SOW (ILM04.0, Exhibit E, E-30, 13.b.1) states, "If the spike recovery is less than 40%, the sample shall be diluted and rerun with another spike. Dilute the sample by a factor of 5 to 10 and rerun." Please explain this contractual noncompliance.
3. On Form DC-2-1 improper corrections were made. The SOW (ILM04.0, Exhibit F, 2.5.8, F-5) states, "Corrections to laboratory documents and raw data shall be made by drawing single lines through the errors and entering the correct information....Corrections and additions to information shall be signed (or initialed) and dated." Please acknowledge this requirement and note for the future.
4. The traffic report page number was not recorded on Form DC-2-2, Item #26. The SOW (ILM04.0, Exhibit B, B-42, U, 2nd paragraph) states, "Inventory the CSF by reviewing the document numbers and recording page number ranges in the column provided on Form DC-2." Since the TR/COC are on the

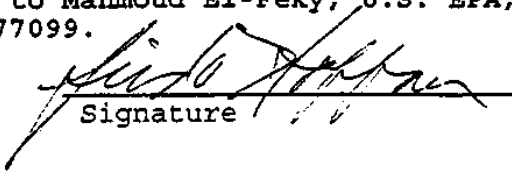
In Reference to
Case 25093/SDG MFGP43
Page 2 of 3 pages
ESAT File No.: I2059

same document, the SOW requires the traffic report page numbers to be recorded on Form DC-2-2. Please acknowledge and note for the future that the traffic report page number must be recorded under Item #26.

5. On Form 4 (pp. 46 and 47), all analytes analyzed by ICP were not recorded for "Initial/Final Sol. A". The SOW (ILM04.0, Exhibit B, B-26 and B-27, Paragraphs beginning "Under "Initial Found Sol, A" and "Under "Final Found Sol. A" and Exhibit E, E-20, 5, 2nd paragraph) states analytes for all wavelengths used for each analyte reported by ICP must be recorded on Form 4 (starting with Solution A). Please make the necessary corrections to pages 46 and 47 and resubmit.
6. For your information, soil samples do not require aluminum and iron matrix spike analyses (ILM04.0, Exhibit E, E-23, Table 3).
7. In the lead instrument raw data, time of analysis was not recorded for the initial and continuing calibration verifications and blanks (ILM04.0, Exhibit B, d, B-11, #9). Please add the time of each ICV, ICB, CCV, and CCB analysis to the lead raw data and resubmit.
8. On Form 14 (p.75), a 0.0 %R was entered for lead sample MFG-P44A. From the raw data (pp. 293 and 294), however, the correct %R should be 98.0. Please correct and resubmit Form 14.
9. In the thallium raw data (pp. 368 - 370 and 380 - 385), the CCV's and CCB's were not identified with the required EPA sample numbers. Please make this correction to all appropriate pages and resubmit.
10. On the Form 14's for the first cyanide run, the "start date" is later than the "end date" and also does not agree with the start date in the raw data pages 404, 405, and 406. Please make the necessary corrections and resubmit the appropriate pages.
11. Please explain why the ICV/CCV concentrations in the cyanide raw data do not agree with the concentrations reported on the Form 2's and make any necessary corrections and resubmissions.
12. On the SDG/TR Cover Sheet (p. 467), the last sample in SDG is also listed as the SDG number, which in this case it is not. Please correct this discrepancy and resubmit page 467.

In Reference to
Case 25093/SDG MFGP43
Page 3 of 3 pages
ESAT File No.: 12059

The EPA expects the laboratory to look into items and submit data within seven days to Mahmoud El-Feky, U.S. EPA, 10625 Fallstone Road, Houston TX 77099.


Signature

12/13/96
Date

Distribution: (1) Lab Copy, (2) Region Copy

Lockheed Martin Services Group
ESAT Region 6

10101 S. W. Freeway, Suite 500, Houston, TX 77074 TEL:(713) 988-2983

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Jeff Reitan

Firm ARI

City Seattle State WA

Telephone 206-621-6490 Ext. _____

FAX Telephone No. 206-621-7523 Ext. _____

Sender:

Name Linda Hoffman ESAT

Date 12/13/96 Time _____

Total Number of pages including this Cover Sheet 4

If you do not receive all the pages or if any pages are unclear,
please call: (713) 988-2983.

MESSAGES: _____

FAX No. (713) 988-2994

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP40

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368I

Level (low/med): LOW Date Received: 10/25/96

% Solids: 43.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	34700			P
7440-36-0	Antimony	21.7	U	N	P
7440-38-2	Arsenic	3.1	B		F
7440-39-3	Barium	163			P
7440-41-7	Beryllium	1.4	B		P
7440-43-9	Cadmium	0.87	U		P
7440-70-2	Calcium	38400			P
7440-47-3	Chromium	51.0			P
7440-48-4	Cobalt	9.7	B		P
7440-50-8	Copper	106			P
7439-89-6	Iron	24200			P
7439-92-1	Lead	46.8			F
7439-95-4	Magnesium	6860			P
7439-96-5	Manganese	308			P
7439-97-6	Mercury	0.23			CV
7440-02-0	Nickel	19.0			P
7440-09-7	Potassium	2480			P
7782-49-2	Selenium	0.42	U	WN	F
7440-22-4	Silver	1.3	U		P
7440-23-5	Sodium	1920	B		P
7440-28-0	Thallium	3.3	B		F
7440-62-2	Vanadium	56.9			P
7440-66-6	Zinc	96.7			P
	Cyanide	1.5			CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP43

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368A

Level (low/med): LOW Date Received: 10/23/96

% Solids: 50.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	30400			P
7440-36-0	Antimony	18.8	U	N	P
7440-38-2	Arsenic	1.5	B		F
7440-39-3	Barium	142			P
7440-41-7	Beryllium	1.6	B		P
7440-43-9	Cadmium	0.75	U		P
7440-70-2	Calcium	5210			P
7440-47-3	Chromium	31.4			P
7440-48-4	Cobalt	10.1	B		P
7440-50-8	Copper	19.1			P
7439-89-6	Iron	16800			P
7439-92-1	Lead	23.6			F
7439-95-4	Magnesium	5940			P
7439-96-5	Manganese	116			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	17.2			P
7440-09-7	Potassium	3690			P
7782-49-2	Selenium	1.9	U	N	F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	2830			P
7440-28-0	Thallium	0.81	B	W	F
7440-62-2	Vanadium	53.5			P
7440-66-6	Zinc	74.4			P
	Cyanide	0.49	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP44

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368B

Level (low/med): LOW Date Received: 10/23/96

% Solids: 51.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26500	-		P
7440-36-0	Antimony	18.9	U	N	P
7440-38-2	Arsenic	1.5	B		F
7440-39-3	Barium	155			P
7440-41-7	Beryllium	1.4	B		P
7440-43-9	Cadmium	0.77	B		P
7440-70-2	Calcium	4490			P
7440-47-3	Chromium	28.7			P
7440-48-4	Cobalt	4.8	B		P
7440-50-8	Copper	16.3			P
7439-89-6	Iron	15200			P
7439-92-1	Lead	20.2			F
7439-95-4	Magnesium	5730			P
7439-96-5	Manganese	102			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	12.1	B		P
7440-09-7	Potassium	3600			P
7782-49-2	Selenium	0.76	U	WN	F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	2610			P
7440-28-0	Thallium	0.64	B	W	F
7440-62-2	Vanadium	50.6			P
7440-66-6	Zinc	53.3			P
	Cyanide	0.49	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP45

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368J

Level (low/med): LOW Date Received: 10/25/96

Solids: 49.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	43400	-		P
7440-36-0	Antimony	19.2	U	N	P
7440-38-2	Arsenic	0.41	U	W	F
7440-39-3	Barium	297			P
7440-41-7	Beryllium	1.9	B		P
7440-43-9	Cadmium	0.77	U		P
7440-70-2	Calcium	6900			P
7440-47-3	Chromium	40.8			P
7440-48-4	Cobalt	5.1	B		P
7440-50-8	Copper	29.5			P
7439-89-6	Iron	19400			P
7439-92-1	Lead	19.9			F
7439-95-4	Magnesium	6910			P
7439-96-5	Manganese	186			P
7439-97-6	Mercury	0.10	B		CV
7440-02-0	Nickel	21.6			P
7440-09-7	Potassium	4750			P
7782-49-2	Selenium	0.81	U	WN	F
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	4140			P
7440-28-0	Thallium	2.6	B		F
7440-62-2	Vanadium	59.3			P
7440-66-6	Zinc	56.4			P
	Cyanide	0.50	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP46

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368K

Level (low/med): LOW Date Received: 10/25/96

% Solids: 39.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	32900	-		P
7440-36-0	Antimony	23.3	U	N	P
7440-38-2	Arsenic	6.6	-		F
7440-39-3	Barium	94.2	-		P
7440-41-7	Beryllium	1.6	B		P
7440-43-9	Cadmium	0.93	U		P
7440-70-2	Calcium	4410	-		P
7440-47-3	Chromium	35.7	-		P
7440-48-4	Cobalt	13.6	B		P
7440-50-8	Copper	19.5	-		P
7439-89-6	Iron	37300	-		P
7439-92-1	Lead	26.5	-		F
7439-95-4	Magnesium	9200	-		P
7439-96-5	Manganese	2780	-		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	29.9	-		P
7440-09-7	Potassium	5540	-		P
7782-49-2	Selenium	0.50	U	WN	F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	4880	-		P
7440-28-0	Thallium	3.3	B		F
7440-62-2	Vanadium	62.0	-		P
7440-66-6	Zinc	94.3	-		P
	Cyanide	0.62	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP47

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368L

Level (low/med): LOW Date Received: 10/25/96

% Solids: 34.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21700			P
7440-36-0	Antimony	26.4	U	N	P
7440-38-2	Arsenic	7.0			F
7440-39-3	Barium	109			P
7440-41-7	Beryllium	1.2	B		P
7440-43-9	Cadmium	1.1	U		P
7440-70-2	Calcium	47200			P
7440-47-3	Chromium	70.1			P
7440-48-4	Cobalt	9.1	B		P
7440-50-8	Copper	143			P
7439-89-6	Iron	21700			P
7439-92-1	Lead	89.1			F
7439-95-4	Magnesium	14300			P
7439-96-5	Manganese	598			P
7439-97-6	Mercury	1.6			CV
7440-02-0	Nickel	27.5			P
7440-09-7	Potassium	2490	B		P
7782-49-2	Selenium	0.53	U	WN	F
7440-22-4	Silver	1.6	U		P
7440-23-5	Sodium	3700			P
7440-28-0	Thallium	2.6	U		F
7440-62-2	Vanadium	42.2			P
7440-66-6	Zinc	120			P
	Cyanide	4.3			CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP48

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368M

Level (low/med): LOW Date Received: 10/25/96

% Solids: 45.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	28500			P
7440-36-0	Antimony	20.5	U	N	P
7440-38-2	Arsenic	11.5			F
7440-39-3	Barium	100			P
7440-41-7	Beryllium	1.5	B		P
7440-43-9	Cadmium	0.82	U		P
7440-70-2	Calcium	3390			P
7440-47-3	Chromium	32.4			P
7440-48-4	Cobalt	17.4	B		P
7440-50-8	Copper	22.9			P
7439-89-6	Iron	25000			P
7439-92-1	Lead	24.6			F
7439-95-4	Magnesium	6860			P
7439-96-5	Manganese	223			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	27.5			P
7440-09-7	Potassium	4680			P
7782-49-2	Selenium	2.1	U	N	F
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	3640			P
7440-28-0	Thallium	2.1	B		F
7440-62-2	Vanadium	53.4			P
7440-66-6	Zinc	73.5			P
	Cyanide	0.54	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

ILM04.0

000013

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP49

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368N

Level (low/med): LOW Date Received: 10/25/96

% Solids: 48.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	25100			P
7440-36-0	Antimony	19.2	U	N	P
7440-38-2	Arsenic	1.2	B		F
7440-39-3	Barium	114			P
7440-41-7	Beryllium	1.6	B		P
7440-43-9	Cadmium	0.77	U		P
7440-70-2	Calcium	3250			P
7440-47-3	Chromium	26.7			P
7440-48-4	Cobalt	6.1	B		P
7440-50-8	Copper	14.8			P
7439-89-6	Iron	17000			P
7439-92-1	Lead	21.3			F
7439-95-4	Magnesium	7050			P
7439-96-5	Manganese	110			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	16.1			P
7440-09-7	Potassium	4760			P
7782-49-2	Selenium	1.9	U	N	F
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	5360			P
7440-28-0	Thallium	2.5	B		F
7440-62-2	Vanadium	47.1			P
7440-66-6	Zinc	66.4			P
	Cyanide	0.52	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

ILM04.0

000014

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP50

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL

Lab Sample ID: 53680

Level (low/med): LOW

Date Received: 10/25/96

% Solids: 46.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27800	-		P
7440-36-0	Antimony	19.6	U	N	P
7440-38-2	Arsenic	1.7	B		F
7440-39-3	Barium	116			P
7440-41-7	Beryllium	1.7	B		P
7440-43-9	Cadmium	0.78	U		P
7440-70-2	Calcium	3150			P
7440-47-3	Chromium	29.0			P
7440-48-4	Cobalt	5.0	B		P
7440-50-8	Copper	14.6			P
7439-89-6	Iron	17100			P
7439-92-1	Lead	21.1			F
7439-95-4	Magnesium	7540			P
7439-96-5	Manganese	143			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	16.6			P
7440-09-7	Potassium	4790			P
7782-49-2	Selenium	2.0	U	N	F
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	5980			P
7440-28-0	Thallium	0.93	B	W	F
7440-62-2	Vanadium	48.6			P
7440-66-6	Zinc	58.1			P
	Cyanide	0.53	U		CA

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After: GREEN

Clarity After: CLOUDY

Artifacts:

Comments:

FORM I - IN

ILM04.0

000015

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP51

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368P

Level (low/med): LOW Date Received: 10/25/96

% Solids: 36.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	22500			P
7440-36-0	Antimony	25.2	U	N	P
7440-38-2	Arsenic	3.2	B		F
7440-39-3	Barium	128			P
7440-41-7	Beryllium	1.6	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	6030			P
7440-47-3	Chromium	24.7			P
7440-48-4	Cobalt	4.7	B		P
7440-50-8	Copper	16.0			P
7439-89-6	Iron	14300			P
7439-92-1	Lead	17.8			F
7439-95-4	Magnesium	8000			P
7439-96-5	Manganese	133			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	17.4	B		P
7440-09-7	Potassium	4290			P
7782-49-2	Selenium	2.7	U	N	F
7440-22-4	Silver	1.5	U		P
7440-23-5	Sodium	5890			P
7440-28-0	Thallium	1.2	B	W	F
7440-62-2	Vanadium	44.2			P
7440-66-6	Zinc	50.4			P
	Cyanide	0.67	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

ILM04.0

000016

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP52

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368C

Level (low/med): LOW Date Received: 10/23/96

% Solids: 72.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5930	-		P
7440-36-0	Antimony	13.5	U	N	P
7440-38-2	Arsenic	2.0	B		F
7440-39-3	Barium	30.6	B		P
7440-41-7	Beryllium	0.36	B		P
7440-43-9	Cadmium	0.54	U		P
7440-70-2	Calcium	837	B		P
7440-47-3	Chromium	6.5			P
7440-48-4	Cobalt	2.1	B		P
7440-50-8	Copper	5.3	B		P
7439-89-6	Iron	5360	-		P
7439-92-1	Lead	8.7	-		F
7439-95-4	Magnesium	1510	-		P
7439-96-5	Manganese	41.0	-		P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	4.4	B		P
7440-09-7	Potassium	906	B		P
7782-49-2	Selenium	0.27	U	WN	F
7440-22-4	Silver	0.81	U		P
7440-23-5	Sodium	1460			P
7440-28-0	Thallium	0.27	B		F
7440-62-2	Vanadium	12.4	B		P
7440-66-6	Zinc	17.4			P
	Cyanide	0.34	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

ILM04.0

000017

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP53

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL

Lab Sample ID: 5368Q

Level (low/med): LOW

Date Received: 10/25/96

% Solids: 70.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15300			P
7440-36-0	Antimony	13.8	U	N	P
7440-38-2	Arsenic	4.7			F
7440-39-3	Barium	57.1			P
7440-41-7	Beryllium	1.0	B		P
7440-43-9	Cadmium	0.55	U		P
7440-70-2	Calcium	1740			P
7440-47-3	Chromium	18.7			P
7440-48-4	Cobalt	12.9	B		P
7440-50-8	Copper	12.1			P
7439-89-6	Iron	21400			P
7439-92-1	Lead	15.9			F
7439-95-4	Magnesium	5080			P
7439-96-5	Manganese	1170			P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	21.6			P
7440-09-7	Potassium	3720			P
7782-49-2	Selenium	0.27	U	WN	F
7440-22-4	Silver	0.83	U		P
7440-23-5	Sodium	3040			P
7440-28-0	Thallium	2.1	B		F
7440-62-2	Vanadium	29.8			P
7440-66-6	Zinc	58.3			P
	Cyanide	0.35	U		CA

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After: GREEN

Clarity After: CLOUDY

Artifacts:

Comments:

FORM I - IN

ILM04.0

000018

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP55

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): SOIL Lab Sample ID: 5368D

Level (low/med): LOW Date Received: 10/23/96

% Solids: 42.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20000	-		P
7440-36-0	Antimony	22.8	U	N	P
7440-38-2	Arsenic	3.9	B		F
7440-39-3	Barium	61.8	B		P
7440-41-7	Beryllium	0.95	B		P
7440-43-9	Cadmium	0.91	U		P
7440-70-2	Calcium	1500	B		P
7440-47-3	Chromium	20.3			P
7440-48-4	Cobalt	5.4	B		P
7440-50-8	Copper	13.9	-		P
7439-89-6	Iron	14700	-		P
7439-92-1	Lead	47.4	-		F
7439-95-4	Magnesium	4560	-		P
7439-96-5	Manganese	98.6	-		P
7439-97-6	Mercury	0.17	B		CV
7440-02-0	Nickel	12.7	B		P
7440-09-7	Potassium	2800	-		P
7782-49-2	Selenium	0.47	U	WN	F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	5370	-		P
7440-28-0	Thallium	0.81	B	W	F
7440-62-2	Vanadium	39.0	-		P
7440-66-6	Zinc	46.8	-		P
	Cyanide	0.59	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: GREEN Clarity After: CLOUDY Artifacts:

Comments:

FORM I - IN

ILM04.0

000019

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP58

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): WATER

Lab Sample ID: 5368G

Level (low/med): LOW

Date Received: 10/23/96

Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27.3	B		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	1.0	U		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	39.5	B		P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	3.5	B		P
7439-89-6	Iron	58.1	B		P
7439-92-1	Lead	1.0	U	W	F
7439-95-4	Magnesium	25.0	U		P
7439-96-5	Manganese	5.0	B		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	500	U		P
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	86.7	B		P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	2.0	U		P
7440-66-6	Zinc	15.1	B		P
	Cyanide	5.0	U		CA

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFGP59

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MFGP43

Matrix (soil/water): WATER

Lab Sample ID: 5368H

Level (low/med): LOW

Date Received: 10/23/96

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27.7	B		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	1.0	U		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	32.3	B		P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.8	B		P
7439-89-6	Iron	20.0	U		P
7439-92-1	Lead	1.4	B		F
7439-95-4	Magnesium	25.0	U		P
7439-96-5	Manganese	1.0	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	500	U		P
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	78.0	B		P
7440-28-0	Thallium	1.0	U	W	F
7440-62-2	Vanadium	2.0	U		P
7440-66-6	Zinc	4.1	B		P
	Cyanide	5.0	U		CA

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

FORM I - IN

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000023

U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MF6P60

Lab Name: ANALYTICAL_RESOURCES_INC. Contract: 68-D5-0134

Lab Code: ARI Case No.: 25093 SAS No.: SDG No.: MF6P43

Matrix (soil/water): WATER

Lab Sample ID: 5368R

Level (low/med): LOW

Date Received: 10/25/96

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26.8	B		P
7440-36-0	Antimony	50.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	1.0	U		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	29.4	B		P
7440-47-3	Chromium	5.0	U		P
7440-48-4	Cobalt	3.0	U		P
7440-50-8	Copper	2.8	B		P
7439-89-6	Iron	20.0	U		P
7439-92-1	Lead	1.3	B		F
7439-95-4	Magnesium	25.0	U		P
7439-96-5	Manganese	1.0	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	10.0	U		P
7440-09-7	Potassium	500	U		P
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	59.1	B		P
7440-28-0	Thallium	1.0	U	W	F
7440-62-2	Vanadium	2.0	U		P
7440-66-6	Zinc	4.0	U		P
	Cyanide	5.0	U		CA

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

FORM I - IN

ILM04.0

000024

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

PESTICIDES/PCBs	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y93	FE-Y94	FE-Z01	FE-Z02	FE-Z03		
alpha-BHC	3.0 U	2.5 U	3.8 U	2.8 U	2.9 U		
beta-BHC	3.0 U	2.5 U	3.8 U	2.8 U	2.9 U		
delta-BHC	3.0 U	2.5 U	3.8 U	2.8 U	2.9 U		
gamma-BHC (lindane)	3.0 U	2.5 U	3.8 U	2.8 U	2.9 U		
Heptachlor	3.0 U	2.5 U	3.8 U	2.8 U	2.9 U		
Aldrin	3.0 U	2.5 U	3.8 U	2.8 U	2.9 U		
Heptachlor epoxide	3.0 U	2.5 U	3.8 U	2.8 U	2.9 U		
Endosulfan I	3.0 U	2.5 U	0.98 J	2.8 U	2.9 U		
Dieldrin	5.8 U	4.8 U	7.3 U	5.5 U	5.7 U		
4,4'-DDE	0.93 J	4.8 U	7.3 U	5.5 U	5.7 U		
Endrin	5.8 U	4.8 U	7.3 U	5.5 U	5.7 U		
Endosulfan II	5.8 U	4.8 U	1.8 J	5.5 U	5.7 U		
4,4'-DDD	3.7 J	4.8 U	7.3 U	5.5 U	5.7 U		
Endosulfan sulfate	5.8 U	4.8 U	7.3 U	5.5 U	5.7 U		
4,4'-DDT	0.98 J	4.8 U	7.3 U	5.5 U	5.7 U		
Methoxychlor	30 U	25 U	38 U	28 U	29 U		
Endrin ketone	5.8 U	4.8 U	7.3 U	5.5 U	5.7 U		
Endrin aldehyde	1.1 J	4.8 U	1.3 J	5.5 U	5.7 U		
alpha-Chlordane	0.31 J	2.5 U	2 J	2.8 U	2.9 U		
gamma-Chlordane	0.45 J	2.5 U	3.8 U	2.8 U	2.9 U		
Toxaphene	300 U	250 U	380 U	280 U	290 U		
Aroclor-1016	58 U	48 U	73 U	55 U	57 U		
Aroclor-1221	120 U	97 U	150 U	110 U	120 U		
Aroclor-1232	58 U	48 U	73 U	55 U	57 U		
Aroclor-1242	58 U	48 U	73 U	55 U	57 U		
Aroclor-1248	58 U	48 U	73 U	55 U	57 U		
Aroclor-1254	58 U	48 U	50 J	55 U	57 U		
Aroclor-1260	58 U	48 U	73 U	55 U	57 U		
Sample wt (g):	30.2	30.0	30.0	30.0	30.0		
%Moisture:	43	31	55	40	42		
Dilution Factor:	1	1	1	1	1		

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

FAX COMMUNICATION LOG

Continuation Page 2
Laboratory/Contact COMPU / Richard Bloom
In Reference To Case No. 25093 SDG: FEY80

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM03.0, p. B-22), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items within 7 days to:

Ms. Christy Macdowell
U.S. EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 988-2986.


Signature

December 4, 1996
Date

Distribution: (1) Lab Copy and (2) Region Copy

In Reference to Case No(s):
25093 SDG: FEY80 (O-1768)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: December 4, 1996
Laboratory Name: COMPU
Lab Contact: Richard Bloom
Region: 6
Regional Contact: Wallace Doong - ESAT
FAX initiated by: Laboratory X Region

In reference to data for the following fractions:

BNA Pest/PCB

Summary of Questions/Issues:

A. BNA

Sample FE-Y84DL: The surrogate recoveries were incorrectly reported (off by a factor of 2) based on the submitted raw data. (pages 797) Please correct and resubmit the Form 2 (page 494).

B. Pest/PCB

1. The reviewer was unable to reproduce the surrogate recoveries for the following samples analyzed on column DB-608, instrument VARIAN36 (analyzed on 11/1/96):

FE-Y80, FE-Y81, FE-Y89, FE-Y89MS/MSD, FE-Y92, FE-Y93, FE-Y94, and PBLKFC.

Based on the submitted raw data, incorrect CF's were used for the analyte quantitation. Please review the data and resubmit the Form 2 (page 1607) if necessary.

2. The amounts injected were not indicated for the standard INDAL48 (analyzed on 10/22/96, 21:52, instrument RTX-1701). Please resubmit the quantitation report (page 1959) with the appropriate standard amounts.
3. Form 6: The retention times (RT's) were incorrectly reported for endosulfan II for two standards analyzed on column DB-608, INDBL48 (10/22/96, 22:26) and INDBH48 (10/23/96, 00:43). Please correct and resubmit page 1777.

LOCKHEED MARTIN SERVICES GROUP
ESAT Region 6

10101 SOUTHWEST FREEWAY, SUITE 500, HOUSTON, TX 77074

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Richard Bloom

Firm COMPU

Address P. O. Box 14998

City RTP

State NC 27709

Telephone (919) 474-7030

Ext. _____

Fax Telephone No. (919) 474-7030

Ext. _____

Sender:

Name Wallace Doong

Date December 4, 1996

Time _____

Total Number of pages including this Cover Sheet 3

If you do not receive all the pages or if any pages are unclear,
please call: (713) 988-2986

MESSAGES: Resubmission request for Case 25093 SDG: FEY80 (O-1768)

Fax Model No. Brother Intellifax 3500ML Fax No. (713) 988-2994

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY77

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829307

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029307C97

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 64

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
---------	----------	---	---

74-87-3-----	Chloromethane	28	U
74-83-9-----	Bromomethane	28	U
75-01-4-----	Vinyl Chloride	28	U
75-00-3-----	Chloroethane	28	U
75-09-2-----	Methylene Chloride	9	JB
67-64-1-----	Acetone	89	B
75-15-0-----	Carbon Disulfide	28	U
75-35-4-----	1,1-Dichloroethene	28	U
75-34-3-----	1,1-Dichloroethane	28	U
540-59-0-----	1,2-Dichloroethene (total)	28	U
67-66-3-----	Chloroform	28	U
107-06-2-----	1,2-Dichloroethane	28	U
78-93-3-----	2-Butanone	28	U
71-55-6-----	1,1,1-Trichloroethane	28	U
56-23-5-----	Carbon Tetrachloride	28	U
75-27-4-----	Bromodichloromethane	28	U
78-87-5-----	1,2-Dichloropropane	28	U
10061-01-5-----	cis-1,3-Dichloropropene	28	U
79-01-6-----	Trichloroethene	28	U
124-48-1-----	Dibromochloromethane	28	U
79-00-5-----	1,1,2-Trichloroethane	28	U
71-43-2-----	Benzene	28	U
10061-02-6-----	trans-1,3-Dichloropropene	28	U
75-25-2-----	Bromoform	28	U
108-10-1-----	4-Methyl-2-Pentanone	28	U
591-78-6-----	2-Hexanone	28	U
127-18-4-----	Tetrachloroethene	28	U
79-34-5-----	1,1,2,2-Tetrachloroethane	28	U
108-88-3-----	Toluene	28	U
108-90-7-----	Chlorobenzene	28	U
100-41-4-----	Ethylbenzene	8	J
100-42-5-----	Styrene	28	U
1330-20-7-----	Xylene (Total)	10	J

FORM I VOA

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY80

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829005

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029005B56

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 50

Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
---------	----------	---	---

74-87-3	Chloromethane	20	U
74-83-9	Bromomethane	20	U
75-01-4	Vinyl Chloride	20	U
75-00-3	Chloroethane	20	U
75-09-2	Methylene Chloride	20	B
67-64-1	Acetone	79	B
75-15-0	Carbon Disulfide	20	U
75-35-4	1,1-Dichloroethene	20	U
75-34-3	1,1-Dichloroethane	20	U
540-59-0	1,2-Dichloroethene (total)	20	U
67-66-3	Chloroform	20	U
107-06-2	1,2-Dichloroethane	20	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	20	U
56-23-5	Carbon Tetrachloride	20	U
75-27-4	Bromodichloromethane	20	U
78-87-5	1,2-Dichloropropane	20	U
10061-01-5	cis-1,3-Dichloropropene	20	U
79-01-6	Trichloroethene	20	U
124-48-1	Dibromochloromethane	20	U
79-00-5	1,1,2-Trichloroethane	20	U
71-43-2	Benzene	20	U
10061-02-6	trans-1,3-Dichloropropene	20	U
75-25-2	Bromoform	20	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	20	U
79-34-5	1,1,2,2-Tetrachloroethane	20	U
108-88-3	Toluene	20	U
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	20	U
100-42-5	Styrene	20	U
1330-20-7	Xylene (Total)	20	U

FORM I VOA

01M03.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY77

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829307

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029307C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 64

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 14

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	ETHANE, 1,1,2-TRICHLORO-1,2,	7.45	41	NJB
2. 107-39-1	1-PENTENE, 2,4,4-TRIMETHYL-	13.47	17	NJ
3.	ETHYLMETHYLBENZENE	19.62	18	J
4.	ETHYLMETHYLBENZENE	20.26	25	J
5.	UNKNOWN	20.49	36	J
6.	UNKNOWN ALKENE	20.59	59	J
7.	UNKNOWN	21.40	84	J
8.	METHYLPROPENYLBENZENE	22.02	109	J
9.	METHYLPROPENYLBENZENE	22.56	15	J
10.	DIHYDROMETHYLBENZENE	22.72	39	J
11.	SUBSTITUTED BENZENE	22.93	54	J
12. 767-59-9	1H-INDENE, 1-METHYL-	23.00	32	NJ
13. 65051-83-4	BENZENE, (1-METHYL-2-CYCLOPR	23.15	75	NJ
14.	DIHYDRODIMETHYLBENZENE	23.35	20	J
15.				
16.				
17.				
18.				
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30.				

FORM I VOA-TIC

OLM03.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY80

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829005

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029005B56

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 50

Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
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FORM I VOA-TIC

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY81

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829006

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029006B56

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 48

Date Analyzed: 10/24/96

GC Column: DB624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

74-87-3-----	Chloromethane	19	U
74-83-9-----	Bromomethane	19	U
75-01-4-----	Vinyl Chloride	19	U
75-00-3-----	Chloroethane	19	U
75-09-2-----	Methylene Chloride	23	B
67-64-1-----	Acetone	130	B
75-15-0-----	Carbon Disulfide	19	U
75-35-4-----	1,1-Dichloroethene	19	U
75-34-3-----	1,1-Dichloroethane	19	U
540-59-0-----	1,2-Dichloroethene (total)	19	U
67-66-3-----	Chloroform	19	U
107-06-2-----	1,2-Dichloroethane	19	U
78-93-3-----	2-Butanone	19	U
71-55-6-----	1,1,1-Trichloroethane	19	U
56-23-5-----	Carbon Tetrachloride	19	U
75-27-4-----	Bromodichloromethane	19	U
78-87-5-----	1,2-Dichloropropane	19	U
10061-01-5-----	cis-1,3-Dichloropropene	19	U
79-01-6-----	Trichloroethene	19	U
124-48-1-----	Dibromochloromethane	19	U
79-00-5-----	1,1,2-Trichloroethane	19	U
71-43-2-----	Benzene	19	U
10061-02-6-----	trans-1,3-Dichloropropene	19	U
75-25-2-----	Bromoform	19	U
108-10-1-----	4-Methyl-2-Pentanone	19	U
591-78-6-----	2-Hexanone	19	U
127-18-4-----	Tetrachloroethene	19	U
79-34-5-----	1,1,2,2-Tetrachloroethane	19	U
108-88-3-----	Toluene	19	U
108-90-7-----	Chlorobenzene	19	U
100-41-4-----	Ethylbenzene	19	U
100-42-5-----	Styrene	19	U
1330-20-7-----	Xylene (Total)	19	U

FORM I VOA

OLM03.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY81

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829006

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029006B56

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 48

Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
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FORM I VOA-TIC

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY82

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829308

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029308C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 50

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	20 U	
74-83-9	Bromomethane	20 U	
75-01-4	Vinyl Chloride	20 U	
75-00-3	Chloroethane	20 U	
75-09-2	Methylene Chloride	6 JB	
67-64-1	Acetone	96 B	
75-15-0	Carbon Disulfide	20 U	
75-35-4	1,1-Dichloroethene	20 U	
75-34-3	1,1-Dichloroethane	20 U	
540-59-0	1,2-Dichloroethene (total)	20 U	
67-66-3	Chloroform	20 U	
107-06-2	1,2-Dichloroethane	20 U	
78-93-3	2-Butanone	21	
71-55-6	1,1,1-Trichloroethane	20 U	
56-23-5	Carbon Tetrachloride	20 U	
75-27-4	Bromodichloromethane	20 U	
78-87-5	1,2-Dichloropropane	20 U	
10061-01-5	cis-1,3-Dichloropropene	20 U	
79-01-6	Trichloroethene	20 U	
124-48-1	Dibromochloromethane	20 U	
79-00-5	1,1,2-Trichloroethane	20 U	
71-43-2	Benzene	20 U	
10061-02-6	trans-1,3-Dichloropropene	20 U	
75-25-2	Bromoform	20 U	
108-10-1	4-Methyl-2-Pentanone	20 U	
591-78-6	2-Hexanone	20 U	
127-18-4	Tetrachloroethene	20 U	
79-34-5	1,1,2,2-Tetrachloroethane	20 U	
108-88-3	Toluene	20 U	
108-90-7	Chlorobenzene	20 U	
100-41-4	Ethylbenzene	20 U	
100-42-5	Styrene	20 U	
1330-20-7	Xylene (Total)	20 U	

FORM I VOA

OLM03.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY82

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829308

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029308C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 50

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	ETHANE, 1,1,2-TRICHLORO-1,2,	7.44	27	NJB
2.	METHYLPROPENYL BENZENE	22.00	13	J
3.	SUBSTITUTED BENZENE	23.13	13	J
4.				
5.				
6.				
7.				
8.				
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FORM I VOA-TIC

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY80

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829309

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029309C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 63

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
---------	----------	---	---

74-87-3	-----Chloromethane	27	U
74-83-9	-----Bromomethane	27	U
75-01-4	-----Vinyl Chloride	27	U
75-00-3	-----Chloroethane	27	U
75-09-2	-----Methylene Chloride	11	JB
67-64-1	-----Acetone	60	B
75-15-0	-----Carbon Disulfide	27	U
75-35-4	-----1,1-Dichloroethene	27	U
75-34-3	-----1,1-Dichloroethane	27	U
540-59-0	-----1,2-Dichloroethene (total)	27	U
67-66-3	-----Chloroform	27	U
107-06-2	-----1,2-Dichloroethane	27	U
78-93-3	-----2-Butanone	14	J
71-55-6	-----1,1,1-Trichloroethane	27	U
56-23-5	-----Carbon Tetrachloride	27	U
75-27-4	-----Bromodichloromethane	27	U
78-87-5	-----1,2-Dichloropropane	27	U
10061-01-5	-----cis-1,3-Dichloropropene	27	U
79-01-6	-----Trichloroethene	27	U
124-48-1	-----Dibromochloromethane	27	U
79-00-5	-----1,1,2-Trichloroethane	27	U
71-43-2	-----Benzene	27	U
10061-02-6	-----trans-1,3-Dichloropropene	27	U
75-25-2	-----Bromoform	27	U
108-10-1	-----4-Methyl-2-Pentanone	27	U
591-78-6	-----2-Hexanone	27	U
127-18-4	-----Tetrachloroethene	27	U
79-34-5	-----1,1,2,2-Tetrachloroethane	27	U
108-88-3	-----Toluene	27	U
108-90-7	-----Chlorobenzene	27	U
100-41-4	-----Ethylbenzene	27	U
100-42-5	-----Styrene	27	U
1330-20-7	-----Xylene (Total)	27	U

FORM I VOA

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY86

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829312

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029312C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 48

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
---------	----------	---	---

74-87-3-----	Chloromethane	19 U	
74-83-9-----	Bromomethane	19 U	
75-01-4-----	Vinyl Chloride	19 U	
75-00-3-----	Chloroethane	19 U	
75-09-2-----	Methylene Chloride	14 JB	
67-64-1-----	Acetone	43 B	
75-15-0-----	Carbon Disulfide	19 U	
75-35-4-----	1,1-Dichloroethene	19 U	
75-34-3-----	1,1-Dichloroethane	19 U	
540-59-0-----	1,2-Dichloroethene (total)	19 U	
67-66-3-----	Chloroform	19 U	
107-06-2-----	1,2-Dichloroethane	19 U	
78-93-3-----	2-Butanone	19 U	
71-55-6-----	1,1,1-Trichloroethane	19 U	
56-23-5-----	Carbon Tetrachloride	19 U	
75-27-4-----	Bromodichloromethane	19 U	
78-87-5-----	1,2-Dichloropropane	19 U	
10061-01-5-----	cis-1,3-Dichloropropene	19 U	
79-01-6-----	Trichloroethene	19 U	
124-48-1-----	Dibromochloromethane	19 U	
79-00-5-----	1,1,2-Trichloroethane	19 U	
71-43-2-----	Benzene	19 U	
10061-02-6-----	trans-1,3-Dichloropropene	19 U	
75-25-2-----	Bromoform	19 U	
108-10-1-----	4-Methyl-2-Pentanone	19 U	
591-78-6-----	2-Hexanone	19 U	
127-18-4-----	Tetrachloroethene	19 U	
79-34-5-----	1,1,2,2-Tetrachloroethane	19 U	
108-88-3-----	Toluene	19 U	
108-90-7-----	Chlorobenzene	19 U	
100-41-4-----	Ethylbenzene	3 J	
100-42-5-----	Styrene	19 U	
1330-20-7-----	Xylene (Total)	19 U	

FORM I VOA

01M03.0

198

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY86

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829312

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029312C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 48

Date Analyzed: 10/26/96

GC Column: DB624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
1. 76-13-1	ETHANE, 1,1,2-TRICHLORO-1,2,	7.45	24	NJB
2.	METHYLNAPHTHALENE	20.69	186	J
3.	METHYLNAPHTHALENE	21.23	171	J
4.	UNKNOWN	22.90	51	J
5. 65051-83-4	BENZENE, (1-METHYL-2-CYCLOPR	23.16	10	NJ
6.				
7.				
8.				
9.				
10.				
11.				
12.				
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FORM I VOA-TIC

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY87

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829313

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029313C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 64

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

74-87-3	Chloromethane	28	U
74-83-9	Bromomethane	28	U
75-01-4	Vinyl Chloride	28	U
75-00-3	Chloroethane	28	U
75-09-2	Methylene Chloride	17	JB
67-64-1	Acetone	59	B
75-15-0	Carbon Disulfide	28	U
75-35-4	1,1-Dichloroethene	28	U
75-34-3	1,1-Dichloroethane	28	U
540-59-0	1,2-Dichloroethene (total)	28	U
67-66-3	Chloroform	28	U
107-06-2	1,2-Dichloroethane	28	U
78-93-3	2-Butanone	28	U
71-55-6	1,1,1-Trichloroethane	28	U
56-23-5	Carbon Tetrachloride	28	U
75-27-4	Bromodichloromethane	28	U
78-87-5	1,2-Dichloropropane	28	U
10061-01-5	cis-1,3-Dichloropropene	28	U
79-01-6	Trichloroethene	28	U
124-48-1	Dibromochloromethane	28	U
79-00-5	1,1,2-Trichloroethane	28	U
71-43-2	Benzene	28	U
10061-02-6	trans-1,3-Dichloropropene	28	U
75-25-2	Bromoform	28	U
108-10-1	4-Methyl-2-Pentanone	28	U
591-78-6	2-Hexanone	28	U
127-18-4	Tetrachloroethene	28	U
79-34-5	1,1,2,2-Tetrachloroethane	28	U
108-88-3	Toluene	28	U
108-90-7	Chlorobenzene	28	U
100-41-4	Ethylbenzene	28	U
100-42-5	Styrene	28	U
1330-20-7	Xylene (Total)	28	U

FORM I VOA

OLM03.0

214

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY87

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829313

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029313C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 64

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.47	20	
2.				
3.				
4.				
5.				
6.				
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FORM I VOA-TIC

OLM03.0

215

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY88

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829314

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GR029314C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 71

Date Analyzed: 10/29/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

74-87-3	Chloromethane	34 U
74-83-9	Bromomethane	34 U
75-01-4	Vinyl Chloride	34 U
75-00-3	Chloroethane	34 U
75-09-2	Methylene Chloride	13 JB
67-64-1	Acetone	34 JB
75-15-0	Carbon Disulfide	34 U
75-35-4	1,1-Dichloroethene	34 U
75-34-3	1,1-Dichloroethane	34 U
540-59-0	1,2-Dichloroethene (total)	34 U
67-66-3	Chloroform	34 U
107-06-2	1,2-Dichloroethane	34 U
78-93-3	2-Butanone	34 U
71-55-6	1,1,1-Trichloroethane	34 U
56-23-5	Carbon Tetrachloride	34 U
75-27-4	Bromodichloromethane	34 U
78-87-5	1,2-Dichloropropane	34 U
10061-01-5	cis-1,3-Dichloropropene	34 U
79-01-6	Trichloroethene	34 U
124-48-1	Dibromochloromethane	34 U
79-00-5	1,1,2-Trichloroethane	34 U
71-43-2	Benzene	34 U
10061-02-6	trans-1,3-Dichloropropene	34 U
75-25-2	Bromoform	34 U
108-10-1	4-Methyl-2-Pentanone	34 U
591-78-6	2-Hexanone	34 U
127-18-4	Tetrachloroethene	34 U
79-34-5	1,1,2,2-Tetrachloroethane	34 U
108-88-3	Toluene	34 U
108-90-7	Chlorobenzene	34 U
100-41-4	Ethylbenzene	34 U
100-42-5	Styrene	34 U
1330-20-7	Xylene (Total)	34 U

FORM I VOA

OLM03.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY88

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829314

Sample wt/vol: 5.0 (g/mL) g Lab File ID: GR029314C57

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: not dec. 71 Date Analyzed: 10/29/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
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FORM I VOA-TIC

OLM03.0

22F

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY89

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829016

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029016B56

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 36

Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
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74-87-3	-----Chloromethane	16	U
74-83-9	-----Bromomethane	16	U
75-01-4	-----Vinyl Chloride	16	U
75-00-3	-----Chloroethane	16	U
75-09-2	-----Methylene Chloride	14	U
67-64-1	-----Acetone	66	B
75-15-0	-----Carbon Disulfide	16	U
75-35-4	-----1,1-Dichloroethene	16	U
75-34-3	-----1,1-Dichloroethane	16	U
540-59-0	-----1,2-Dichloroethene (total)	16	U
67-66-3	-----Chloroform	16	U
107-06-2	-----1,2-Dichloroethane	16	U
78-93-3	-----2-Butanone	16	U
71-55-6	-----1,1,1-Trichloroethane	16	U
56-23-5	-----Carbon Tetrachloride	16	U
75-27-4	-----Bromodichloromethane	16	U
78-87-5	-----1,2-Dichloropropane	16	U
10061-01-5	-----cis-1,3-Dichloropropene	16	U
79-01-6	-----Trichloroethene	16	U
124-48-1	-----Dibromochloromethane	16	U
79-00-5	-----1,1,2-Trichloroethane	16	U
71-43-2	-----Benzene	16	U
10061-02-6	-----trans-1,3-Dichloropropene	16	U
75-25-2	-----Bromoform	16	U
108-10-1	-----4-Methyl-2-Pentanone	16	U
591-78-6	-----2-Hexanone	16	U
127-18-4	-----Tetrachloroethene	16	U
79-34-5	-----1,1,2,2-Tetrachloroethane	16	U
108-88-3	-----Toluene	16	U
108-90-7	-----Chlorobenzene	16	U
100-41-4	-----Ethylbenzene	16	U
100-42-5	-----Styrene	16	U
1330-20-7	-----Xylene (Total)	16	U

FORM I VOA

OLM03.0

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY89

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829016

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029016B36

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 36

Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
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27.				
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29.				
30.				

FORM I VOA-TIC

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY90

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829315

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GR029315C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 32

Date Analyzed: 10/29/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	7	JB
67-64-1	Acetone	15	B
75-15-0	Carbon Disulfide	15	U
75-35-4	1,1-Dichloroethene	15	U
75-34-3	1,1-Dichloroethane	15	U
540-59-0	1,2-Dichloroethene (total)	15	U
67-66-3	Chloroform	15	U
107-06-2	1,2-Dichloroethane	15	U
78-93-3	2-Butanone	15	U
71-55-6	1,1,1-Trichloroethane	15	U
56-23-5	Carbon Tetrachloride	15	U
75-27-4	Bromodichloromethane	15	U
78-87-5	1,2-Dichloropropane	15	U
10061-01-5	cis-1,3-Dichloropropene	15	U
79-01-6	Trichloroethene	15	U
124-48-1	Dibromochloromethane	15	U
79-00-5	1,1,2-Trichloroethane	15	U
71-43-2	Benzene	15	U
10061-02-6	trans-1,3-Dichloropropene	15	U
75-25-2	Bromoform	15	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	15	U
79-34-5	1,1,2,2-Tetrachloroethane	15	U
108-88-3	Toluene	15	U
108-90-7	Chlorobenzene	15	U
100-41-4	Ethylbenzene	15	U
100-42-5	Styrene	15	U
1330-20-7	Xylene (Total)	15	U

FORM I VOA

OLM03:0

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY90

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829315

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GR029315C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 32

Date Analyzed: 10/29/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
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FORM I VOA-TIC

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY91

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829316

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: G2R29316C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 38

Date Analyzed: 10/29/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

74-87-3	Chloromethane	16	U
74-83-9	Bromomethane	16	U
75-01-4	Vinyl Chloride	16	U
75-00-3	Chloroethane	16	U
75-09-2	Methylene Chloride	5	JB
67-64-1	Acetone	16	JB
75-15-0	Carbon Disulfide	16	U
75-35-4	1,1-Dichloroethene	16	U
75-34-3	1,1-Dichloroethane	16	U
540-59-0	1,2-Dichloroethene (total)	16	U
67-66-3	Chloroform	16	U
107-06-2	1,2-Dichloroethane	16	U
78-93-3	2-Butanone	16	U
71-55-6	1,1,1-Trichloroethane	16	U
56-23-5	Carbon Tetrachloride	16	U
75-27-4	Bromodichloromethane	16	U
78-87-5	1,2-Dichloropropane	16	U
10061-01-5	cis-1,3-Dichloropropene	16	U
79-01-6	Trichloroethene	16	U
124-48-1	Dibromochloromethane	16	U
79-00-5	1,1,2-Trichloroethane	16	U
71-43-2	Benzene	16	U
10061-02-6	trans-1,3-Dichloropropene	16	U
75-25-2	Bromoform	16	U
108-10-1	4-Methyl-2-Pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	16	U
79-34-5	1,1,2,2-Tetrachloroethane	16	U
108-88-3	Toluene	16	U
108-90-7	Chlorobenzene	16	U
100-41-4	Ethylbenzene	16	U
100-42-5	Styrene	16	U
1330-20-7	Xylene (Total)	16	U

FORM I VOA

OLM03.0

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY91

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829316

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: G2R29316C57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 38

Date Analyzed: 10/29/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
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FORM I VOA-TIC

OLM03.0

1253

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY92

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829017

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029017B56

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 58

Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

74-87-3	Chloromethane	24	U
74-83-9	Bromomethane	24	U
75-01-4	Vinyl Chloride	24	U
75-00-3	Chloroethane	24	U
75-09-2	Methylene Chloride	19	JB
67-64-1	Acetone	83	B
75-15-0	Carbon Disulfide	24	U
75-35-4	1,1-Dichloroethene	24	U
75-34-3	1,1-Dichloroethane	24	U
540-59-0	1,2-Dichloroethene (total)	24	U
67-66-3	Chloroform	24	U
107-06-2	1,2-Dichloroethane	24	U
78-93-3	2-Butanone	24	U
71-55-6	1,1,1-Trichloroethane	24	U
56-23-5	Carbon Tetrachloride	24	U
75-27-4	Bromodichloromethane	24	U
78-87-5	1,2-Dichloropropane	24	U
10061-01-5	cis-1,3-Dichloropropene	24	U
79-01-6	Trichloroethene	24	U
124-48-1	Dibromochloromethane	24	U
79-00-5	1,1,2-Trichloroethane	24	U
71-43-2	Benzene	24	U
10061-02-6	trans-1,3-Dichloropropene	24	U
75-25-2	Bromoform	24	U
108-10-1	4-Methyl-2-Pentanone	24	U
591-78-6	2-Hexanone	24	U
127-18-4	Tetrachloroethene	24	U
79-34-5	1,1,2,2-Tetrachloroethane	24	U
108-88-3	Toluene	24	U
108-90-7	Chlorobenzene	24	U
100-41-4	Ethylbenzene	24	U
100-42-5	Styrene	24	U
1330-20-7	Xylene (Total)	24	U

FORM I VOA

OLM03.0

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY92

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829017

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029017B56

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 58

Date Analyzed: 10/24/96

GC Column: DB624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-TIC

OLM03.0

262

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY93

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829018

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029018B56

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 43

Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

74-87-3	Chloromethane	18	U
74-83-9	Bromomethane	18	U
75-01-4	Vinyl Chloride	18	U
75-00-3	Chloroethane	18	U
75-09-2	Methylene Chloride	13	U
67-64-1	Acetone	56	B
75-15-0	Carbon Disulfide	18	U
75-35-4	1,1-Dichloroethane	18	U
75-34-3	1,1-Dichloroethane	18	U
540-59-0	1,2-Dichloroethane (total)	18	U
67-66-3	Chloroform	18	U
107-06-2	1,2-Dichloroethane	18	U
78-93-3	2-Butanone	18	U
71-55-6	1,1,1-Trichloroethane	18	U
56-23-5	Carbon Tetrachloride	18	U
75-27-4	Bromodichloromethane	18	U
78-87-5	1,2-Dichloropropane	18	U
10061-01-5	cis-1,3-Dichloropropene	18	U
79-01-6	Trichloroethene	18	U
124-48-1	Dibromochloromethane	18	U
79-00-5	1,1,2-Trichloroethane	18	U
71-43-2	Benzene	18	U
10061-02-6	trans-1,3-Dichloropropene	18	U
75-25-2	Bromoform	18	U
108-10-1	4-Methyl-2-Pentanone	18	U
591-78-6	2-Hexanone	18	U
127-18-4	Tetrachloroethene	18	U
79-34-5	1,1,2,2-Tetrachloroethane	18	U
108-88-3	Toluene	18	U
108-90-7	Chlorobenzene	18	U
100-41-4	Ethylbenzene	18	U
100-42-5	Styrene	18	U
1330-20-7	Xylene (Total)	18	U

FORM I VOA

OLM03.0

270

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY93

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829018

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029018B56

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 43

Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.
1.			
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FORM I VOA-TIC

OLM03.0

271

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY94

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829020

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029020B56

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 31

Date Analyzed: 10/24/96

GC Column: DB624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/Kg
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	10	JB
67-64-1	Acetone	83	B
75-15-0	Carbon Disulfide	14	U
75-35-4	1,1-Dichloroethene	14	U
75-34-3	1,1-Dichloroethane	14	U
540-59-0	1,2-Dichloroethene (total)	14	U
67-66-3	Chloroform	14	U
107-06-2	1,2-Dichloroethane	14	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
75-27-4	Bromodichloromethane	14	U
78-87-5	1,2-Dichloropropane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
79-01-6	Trichloroethene	14	U
124-48-1	Dibromochloromethane	14	U
79-00-5	1,1,2-Trichloroethane	14	U
71-43-2	Benzene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
75-25-2	Bromoform	14	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-88-3	Toluene	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U
100-42-5	Styrene	14	U
1330-20-7	Xylene (Total)	14	U

FORM I VOA

OLM03.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY94

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829020

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029020B56

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. 31

Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-TIC

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ01

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829317

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029317C

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 55

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

Q

74-87-3	-----Chloromethane	22	U
74-83-9	-----Bromomethane	22	U
75-01-4	-----Vinyl Chloride	22	U
75-00-3	-----Chloroethane	22	U
75-09-2	-----Methylene Chloride	15	JB
67-64-1	-----Acetone	91	B
75-15-0	-----Carbon Disulfide	22	U
75-35-4	-----1,1-Dichloroethene	22	U
75-34-3	-----1,1-Dichloroethane	22	U
540-59-0	-----1,2-Dichloroethene (total)	22	U
67-66-3	-----Chloroform	22	U
107-06-2	-----1,2-Dichloroethane	22	U
78-93-3	-----2-Butanone	22	U
71-55-6	-----1,1,1-Trichloroethane	22	U
56-23-5	-----Carbon Tetrachloride	22	U
75-27-4	-----Bromodichloromethane	22	U
78-87-5	-----1,2-Dichloropropane	22	U
10061-01-5	-----cis-1,3-Dichloropropene	22	U
79-01-6	-----Trichloroethene	22	U
124-48-1	-----Dibromochloromethane	22	U
79-00-5	-----1,1,2-Trichloroethane	22	U
71-43-2	-----Benzene	22	U
10061-02-6	-----trans-1,3-Dichloropropene	22	U
75-25-2	-----Bromoform	22	U
108-10-1	-----4-Methyl-2-Pentanone	22	U
591-78-6	-----2-Hexanone	22	U
127-18-4	-----Tetrachloroethene	22	U
79-34-5	-----1,1,2,2-Tetrachloroethane	22	U
108-88-3	-----Toluene	22	U
108-90-7	-----Chlorobenzene	22	U
100-41-4	-----Ethylbenzene	22	U
100-42-5	-----Styrene	22	U
1330-20-7	-----Xylene (Total)	18	J

FORM I VOA

OLM03.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEZ01

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829317

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029317CS

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 55

Date Analyzed: 10/26/96

GC Column: DB624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	ETHANE, 1,1,2-TRICHLORO-1,2,	7.45	15	NJB
2. 107-39-1	1-PENTENE, 2,4,4-TRIMETHYL-	13.47	20	NJ
3. 100-40-3	CYCLOHEXENE, 4-ETHENYL-	17.45	39	NJ
4.	ETHYLMETHYLBENZENE	19.61	11	J
5.	ETHYLMETHYLBENZENE	20.25	21	J
6.	UNKNOWN HYDROCARBON	20.48	72	J
7.	UNKNOWN ALKENE	20.58	99	J
8.	UNKNOWN	20.98	75	J
9. 873-49-4	BENZENE, CYCLOPROPYL-	21.39	58	J
10.	DIETHYLBENZENE	21.48	13	J
11.	UNKNOWN	21.88	11	J
12.	DIHYDROMETHYLBENZENE	22.00	87	J
13.	DIHYDROMETHYLBENZENE	22.70	14	J
14.	DIHYDROMETHYLBENZENE	22.92	31	J
15. 767-59-9	1H-INDENE, 1-METHYL-	22.99	16	NJ
16. 65051-83-4	BENZENE, (1-METHYL-2-CYCLOPR	23.13	49	NJ
17.	DIHYDRODIMETHYLBENZENE	23.32	16	J
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FORM I VOA-TIC

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ02

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829319

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029318A57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 40

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
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74-87-3	-----Chloromethane	17	U
74-83-9	-----Bromomethane	17	U
75-01-4	-----Vinyl Chloride	17	U
75-00-3	-----Chloroethane	17	U
75-09-2	-----Methylene Chloride	9	JB
67-64-1	-----Acetone	49	B
75-15-0	-----Carbon Disulfide	17	U
75-35-4	-----1,1-Dichloroethene	17	U
75-34-3	-----1,1-Dichloroethane	17	U
540-59-0	-----1,2-Dichloroethene (total)	17	U
67-66-3	-----Chloroform	17	U
107-06-2	-----1,2-Dichloroethane	17	U
78-93-3	-----2-Butanone	17	U
71-55-6	-----1,1,1-Trichloroethane	17	U
56-23-5	-----Carbon Tetrachloride	17	U
75-27-4	-----Bromodichloromethane	17	U
78-87-5	-----1,2-Dichloropropane	17	U
10061-01-5	-----cis-1,3-Dichloropropene	17	U
79-01-6	-----Trichloroethene	17	U
124-48-1	-----Dibromochloromethane	17	U
79-00-5	-----1,1,2-Trichloroethane	17	U
71-43-2	-----Benzene	17	U
10061-02-6	-----trans-1,3-Dichloropropene	17	U
75-25-2	-----Bromoform	17	U
108-10-1	-----4-Methyl-2-Pentanone	17	U
591-78-6	-----2-Hexanone	17	U
127-18-4	-----Tetrachloroethene	17	U
79-34-5	-----1,1,2,2-Tetrachloroethane	17	U
108-88-3	-----Toluene	17	U
108-90-7	-----Chlorobenzene	17	U
100-41-4	-----Ethylbenzene	17	U
100-42-5	-----Styrene	17	U
1330-20-7	-----Xylene (Total)	17	U

FORM I VOA

OLM08.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEZ02

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829319

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GH029318A57

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 40

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 76-13-1	ETHANE, 1,1,2-TRICHLORO-1,2,	7.50	12	NJB
2. 123-48-8	3-HEPTENE, 2,2,4,6,6-PENTAME	20.63	9	NJ
3.	SUBSTITUTED BENZENE	21.43	9	J
4. 767-58-8	INDAN, 1-METHYL-	22.06	12	NJ
5. 65051-83-4	BENZENE, (1-METHYL-2-CYCLOPR	23.18	13	NJ
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FORM I VOA-TIC

10/26/96

319

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ03

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829319

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GR029319A

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 42

Date Analyzed: 11/04/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
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74-87-3	-----Chloromethane	17	U
74-83-9	-----Bromomethane	17	U
75-01-4	-----Vinyl Chloride	17	U
75-00-3	-----Chloroethane	17	U
75-09-2	-----Methylene Chloride	9	JB
67-64-1	-----Acetone	36	
75-15-0	-----Carbon Disulfide	17	U
75-35-4	-----1,1-Dichloroethene	17	U
75-34-3	-----1,1-Dichloroethane	17	U
540-59-0	-----1,2-Dichloroethene (total)	17	U
67-66-3	-----Chloroform	17	U
107-06-2	-----1,2-Dichloroethane	17	U
78-93-3	-----2-Butanone	17	U
71-55-6	-----1,1,1-Trichloroethane	17	U
56-23-5	-----Carbon Tetrachloride	17	U
75-27-4	-----Bromodichloromethane	17	U
78-87-5	-----1,2-Dichloropropane	17	U
10061-01-5	-----cis-1,3-Dichloropropene	17	U
79-01-6	-----Trichloroethene	17	U
124-48-1	-----Dibromochloromethane	17	U
79-00-5	-----1,1,2-Trichloroethane	17	U
71-43-2	-----Benzene	17	U
10061-02-6	-----trans-1,3-Dichloropropene	17	U
75-25-2	-----Bromoform	17	U
108-10-1	-----4-Methyl-2-Pentanone	17	U
591-78-6	-----2-Hexanone	17	U
127-18-4	-----Tetrachloroethene	17	U
79-34-5	-----1,1,2,2-Tetrachloroethane	17	U
108-88-3	-----Toluene	17	U
108-90-7	-----Chlorobenzene	17	U
100-41-4	-----Ethylbenzene	17	U
100-42-5	-----Styrene	17	U
1330-20-7	-----Xylene (Total)	17	U

FORM I VOA

OLM03.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEZ03

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829319

Sample wt/vol: 5.0 (g/mL) g

Lab File ID: GR029319A56

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. 42

Date Analyzed: 11/04/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-TIC

OLM03.0

333

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY77

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829307

Sample wt/vol: 30.4 (g/mL) g Lab File ID: G2D29307C62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 64 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 7.4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND	Q
108-95-2	Phenol	9000 U
111-44-4	bis(2-Chloroethyl) ether	9000 U
95-57-8	2-Chlorophenol	9000 U
541-73-1	1,3-Dichlorobenzene	9000 U
106-46-7	1,4-Dichlorobenzene	9000 U
95-50-1	1,2-Dichlorobenzene	9000 U
95-48-7	2-Methylphenol	9000 U
108-60-1	2,2'-oxybis(1-Chloropropane)	9000 U
106-44-5	4-Methylphenol	9000 U
621-64-7	N-Nitroso-di-n-propylamine	9000 U
67-72-1	Hexachloroethane	9000 U
98-95-3	Nitrobenzene	9000 U
78-59-1	Isophorone	9000 U
88-75-5	2-Nitrophenol	9000 U
105-67-9	2,4-Dimethylphenol	9000 U
111-91-1	bis(2-Chloroethoxy) methane	9000 U
120-83-2	2,4-Dichlorophenol	9000 U
120-82-1	1,2,4-Trichlorobenzene	9000 U
91-20-3	Naphthalene	4600 J
106-47-8	4-Chloroaniline	9000 U
87-68-3	Hexachlorobutadiene	9000 U
59-50-7	4-Chloro-3-methylphenol	9000 U
91-57-6	2-Methylnaphthalene	7200 J
77-47-4	Hexachlorocyclopentadiene	9000 U
88-06-2	2,4,6-Trichlorophenol	9000 U
95-95-4	2,4,5-Trichlorophenol	23000 U
91-58-7	2-Chloronaphthalene	9000 U
88-74-4	2-Nitroaniline	23000 U
131-11-3	Dimethylphthalate	9000 U
208-96-8	Acenaphthylene	12000
606-20-2	2,6-Dinitrotoluene	9000 U
99-09-2	3-Nitroaniline	23000 U
83-32-9	Acenaphthene	14000

FORM I SV-1

OLM03.0

530

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY77

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829307
Sample wt/vol: 30.4 (g/mL) g Lab File ID: G2D29307C62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 64 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96
Injection Volume: 2.0 (uL) Dilution Factor: 10.0
GPC Cleanup: (Y/N) Y pH: 7.4

CONCENTRATION UNITS:
CAS NO. COMPOUND (ug/L or ug/Kg) ug/Kg Q

51-28-5-----	2,4-Dinitrophenol	23000	U
100-02-7-----	4-Nitrophenol	23000	U
132-64-9-----	Dibenzofuran	9000	U
121-14-2-----	2,4-Dinitrotoluene	9000	U
84-66-2-----	Diethylphthalate	9000	U
7005-72-3-----	4-Chlorophenyl-phenylether	9000	U
86-73-7-----	Fluorene	18000	
100-01-6-----	4-Nitroaniline	23000	U
534-52-1-----	4,6-Dinitro-2-methylphenol	23000	U
86-30-6-----	N-nitrosodiphenylamine (1)	9000	U
101-55-3-----	4-Bromophenyl-phenylether	9000	U
118-74-1-----	Hexachlorobenzene	9000	U
87-86-5-----	Pentachlorophenol	23000	U
85-01-8-----	Phenanthrene	55000	
120-12-7-----	Anthracene	11000	
86-74-8-----	Carbazole	9000	U
84-74-2-----	Di-n-butylphthalate	9000	U
206-44-0-----	Fluoranthene	12000	
129-00-0-----	Pyrene	22000	
85-68-7-----	Butylbenzylphthalate	9000	U
91-94-1-----	3,3'-Dichlorobenzidine	9000	U
56-55-3-----	Benzo(a)anthracene	5600	J
218-01-9-----	Chrysene	5300	J
117-81-7-----	bis(2-Ethylhexyl)phthalate	9000	U
117-84-0-----	Di-n-octylphthalate	9000	U
205-99-2-----	Benzo(b)fluoranthene	2700	XJ
207-08-9-----	Benzo(k)fluoranthene	3000	XJ
50-32-8-----	Benzo(a)pyrene	3900	J
193-39-5-----	Indeno(1,2,3-cd)pyrene	720	J
53-70-3-----	Dibenzo(a,h)anthracene	9000	U
191-24-2-----	Benzo(g,h,i)perylene	860	J

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

531

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY77

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829307
Sample wt/vol: 30.4 (g/mL) g Lab File ID: G2D29307C62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 64 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96
Injection Volume: 2.0 (uL) Dilution Factor: 10.0
GPC Cleanup: (Y/N) Y pH: 7.4

Number TICs found: 30 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.51	8100	JAB
2.	UNKNOWN	6.56	3900	J
3.	UNKNOWN	6.68	3900	J
4.	UNKNOWN PAH	8.78	11000	J
5.	METHYLNAPHTHALENE	9.80	16000	J
6.	METHYLNAPHTHALENE	10.05	15000	J
7.	ETHYLNAPHTHALENE	10.80	13000	J
8.	DIMETHYLNAPHTHALENE	11.03	3300	J
9.	UNKNOWN PAH	11.14	3500	J
10.	DIMETHYLNAPHTHALENE	11.22	2700	J
11.	UNKNOWN	12.58	2500	J
12.	UNKNOWN	12.65	2200	J
13.	UNKNOWN	12.83	3300	J
14.	METHYLFLUORENE	13.37	9200	J
15.	METHYLFLUORENE	13.42	7200	J
16.	METHYLFLUORENE	13.51	5600	J
17.	UNKNOWN	13.60	3300	J
18.	UNKNOWN	14.51	2900	J
19.	METHYLANTHRACENE	14.83	4100	J
20.	METHYLPHENANTHRENE	14.87	4000	J
21.	UNKNOWN	15.00	12000	J
22.	METHYLANTHRACENE	15.04	5600	J
23.	PHENYLNAPHTHALENE	15.33	7300	J
24.	UNKNOWN	15.78	2700	J
25.	UNKNOWN	15.89	2700	J
26.	UNKNOWN PAH	16.13	4500	J
27.	BENZOFUORENE	16.89	5900	J
28.	BENZOFUORENE	17.00	3900	J
29.	METHYLPYRENE	17.20	2400	J
30.	UNKNOWN PAH	17.25	3400	J

FORM I SV-TIC

OLM03.0

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY80

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829005

Sample wt/vol: 30.0 (g/mL) g Lab File ID: GH029005B62

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: 50 decanted: (Y/N) N Date Extracted: 10/24/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

108-95-2-----	Phenol	660 U
111-44-4-----	bis (2-Chloroethyl) ether	660 U
95-57-8-----	2-Chlorophenol	660 U
541-73-1-----	1,3-Dichlorobenzene	660 U
106-46-7-----	1,4-Dichlorobenzene	660 U
95-50-1-----	1,2-Dichlorobenzene	660 U
95-48-7-----	2-Methylphenol	660 U
108-60-1-----	2,2'-oxybis (1-Chloropropane)	660 U
106-44-5-----	4-Methylphenol	660 U
621-64-7-----	N-Nitroso-di-n-propylamine	660 U
67-72-1-----	Hexachloroethane	660 U
98-95-3-----	Nitrobenzene	660 U
78-59-1-----	Isophorone	660 U
88-75-5-----	2-Nitrophenol	660 U
105-67-9-----	2,4-Dimethylphenol	660 U
111-91-1-----	bis (2-Chloroethoxy) methane	660 U
120-83-2-----	2,4-Dichlorophenol	660 U
120-82-1-----	1,2,4-Trichlorobenzene	660 U
91-20-3-----	Naphthalene	660 U
106-47-8-----	4-Chloroaniline	660 U
87-68-3-----	Hexachlorobutadiene	660 U
59-50-7-----	4-Chloro-3-methylphenol	660 U
91-57-6-----	2-Methylnaphthalene	660 U
77-47-4-----	Hexachlorocyclopentadiene	660 U
88-06-2-----	2,4,6-Trichlorophenol	660 U
95-95-4-----	2,4,5-Trichlorophenol	1700 U
91-58-7-----	2-Chloronaphthalene	660 U
88-74-4-----	2-Nitroaniline	1700 U
131-11-3-----	Dimethylphthalate	660 U
208-96-8-----	Acenaphthylene	660 U
606-20-2-----	2,6-Dinitrotoluene	660 U
99-09-2-----	3-Nitroaniline	1700 U
83-32-9-----	Acenaphthene	660 U

FORM I SV-1

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY80

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829005
Sample wt/vol: 30.0 (g/mL) g Lab File ID: GH029005B62
Level: (low/med) LOW Date Received: 10/23/96
% Moisture: 50 decanted: (Y/N) N Date Extracted: 10/24/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5-----	2,4-Dinitrophenol	1700	U
100-02-7-----	4-Nitrophenol	1700	U
132-64-9-----	Dibenzofuran	660	U
121-14-2-----	2,4-Dinitrotoluene	660	U
84-66-2-----	Diethylphthalate	660	U
7005-72-3-----	4-Chlorophenyl-phenylether	660	U
86-73-7-----	Fluorene	660	U
100-01-6-----	4-Nitroaniline	1700	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1700	U
86-30-6-----	N-nitrosodiphenylamine (1)	660	U
101-55-3-----	4-Bromophenyl-phenylether	660	U
118-74-1-----	Hexachlorobenzene	660	U
87-86-5-----	Pentachlorophenol	1700	U
85-01-8-----	Phenanthrene	660	U
120-12-7-----	Anthracene	660	U
86-74-8-----	Carbazole	660	U
84-74-2-----	Di-n-butylphthalate	660	U
206-44-0-----	Fluoranthene	660	U
129-00-0-----	Pyrene	660	U
85-68-7-----	Butylbenzylphthalate	660	U
91-94-1-----	3,3'-Dichlorobenzidine	660	U
56-55-3-----	Benzo(a)anthracene	660	U
218-01-9-----	Chrysene	660	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	130	J ✓
117-84-0-----	Di-n-octylphthalate	660	U
205-99-2-----	Benzo(b)fluoranthene	660	U
207-08-9-----	Benzo(k)fluoranthene	660	U
50-32-8-----	Benzo(a)pyrene	660	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	660	U
53-70-3-----	Dibenzo(a,h)anthracene	660	U
191-24-2-----	Benzo(g,h,i)perylene	660	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY80

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829005

Sample wt/vol: 30.0 (g/mL) g Lab File ID: GH029005B62

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: 50 decanted: (Y/N) N Date Extracted: 10/24/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

Number TICs found: 12

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.93	11000	JAB
2.	UNKNOWN (BC)	5.16	480	JB
3.	CYCLOHEXENONE	6.17	180	J
4.	UNKNOWN	7.08	900	J
5.	UNKNOWN	10.41	480	J
6.	UNKNOWN	10.53	240	J
7.	UNKNOWN	20.30	650	J
8.	UNKNOWN	22.30	160	J
9.	UNKNOWN	22.76	200	J
10.	UNKNOWN	23.36	150	J
11.	UNKNOWN	23.85	2100	J
12.	UNKNOWN	25.26	260	J
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14.				
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FORM I SV-TIC

OLM03.0

600

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY81

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829006

Sample wt/vol: 30.3 (g/mL) g Lab File ID: GH029006B62

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/24/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	630	U
111-44-4	bis(2-Chloroethyl) ether	630	U
95-57-8	2-Chlorophenol	630	U
541-73-1	1,3-Dichlorobenzene	630	U
106-46-7	1,4-Dichlorobenzene	630	U
95-50-1	1,2-Dichlorobenzene	630	U
95-48-7	2-Methylphenol	630	U
108-60-1	2,2'-oxybis(1-Chloropropane)	630	U
106-44-5	4-Methylphenol	630	U
621-64-7	N-Nitroso-di-n-propylamine	630	U
67-72-1	Hexachloroethane	630	U
98-95-3	Nitrobenzene	630	U
78-59-1	Isophorone	630	U
88-75-5	2-Nitrophenol	630	U
105-67-9	2,4-Dimethylphenol	630	U
111-91-1	bis(2-Chloroethoxy) methane	630	U
120-83-2	2,4-Dichlorophenol	630	U
120-82-1	1,2,4-Trichlorobenzene	630	U
91-20-3	Naphthalene	630	U
106-47-8	4-Chloroaniline	630	U
87-68-3	Hexachlorobutadiene	630	U
59-50-7	4-Chloro-3-methylphenol	630	U
91-57-6	2-Methylnaphthalene	630	U
77-47-4	Hexachlorocyclopentadiene	630	U
88-06-2	2,4,6-Trichlorophenol	630	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	630	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethylphthalate	630	U
208-96-8	Acenaphthylene	630	U
606-20-2	2,6-Dinitrotoluene	630	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	630	U

FORM I SV-1

OLM03.0

626

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY81

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829006

Sample wt/vol: 30.3 (g/mL) g Lab File ID: GH029006B62

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/24/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5-----	2,4-Dinitrophenol	1600	U
100-02-7-----	4-Nitrophenol	1600	U
132-64-9-----	Dibenzofuran	630	U
121-14-2-----	2,4-Dinitrotoluene	630	U
84-66-2-----	Diethylphthalate	630	U
7005-72-3-----	4-Chlorophenyl-phenylether	630	U
86-73-7-----	Fluorene	630	U
100-01-6-----	4-Nitroaniline	1600	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1600	U
86-30-6-----	N-nitrosodiphenylamine (1)	630	U
101-55-3-----	4-Bromophenyl-phenylether	630	U
118-74-1-----	Hexachlorobenzene	630	U
87-86-5-----	Pentachlorophenol	1600	U
85-01-8-----	Phenanthrene	630	U
120-12-7-----	Anthracene	630	U
86-74-8-----	Carbazole	630	U
84-74-2-----	Di-n-butylphthalate	53	J
206-44-0-----	Fluoranthene	630	U
129-00-0-----	Pyrene	630	U
85-68-7-----	Butylbenzylphthalate	630	U
91-94-1-----	3,3'-Dichlorobenzidine	630	U
56-55-3-----	Benzo(a)anthracene	630	U
218-01-9-----	Chrysene	630	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	120	J
117-84-0-----	Di-n-octylphthalate	630	U
205-99-2-----	Benzo(b)fluoranthene	630	U
207-08-9-----	Benzo(k)fluoranthene	630	U
50-32-8-----	Benzo(a)pyrene	630	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	630	U
53-70-3-----	Dibenzo(a,h)anthracene	630	U
191-24-2-----	Benzo(g,h,i)perylene	630	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY81

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829006
Sample wt/vol: 30.3 (g/mL) g Lab File ID: GH029006B62
Level: (low/med) LOW Date Received: 10/23/96
% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/24/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 10 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.93	9600	JAB
2.	UNKNOWN (BC)	5.16	450	JB
3.	CYCLOHEXENONE	6.17	140	J
4.	UNKNOWN	6.96	460	J
5.	UNKNOWN	7.08	550	J
6.	UNKNOWN	10.41	420	J
7.	UNKNOWN	10.53	220	J
8.	UNKNOWN	20.30	390	J
9.	UNKNOWN	22.28	140	J
10.	UNKNOWN	23.84	1300	J
11.				
12.				
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FORM I SV-TIC

OLM03.0

628

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY82

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829308
Sample wt/vol: 30.4 (g/mL) g Lab File ID: GH029308A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 50 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.1

CONCENTRATION UNITS:
CAS NO. COMPOUND (ug/L or ug/Kg) ug/Kg Q

108-95-2-----	Phenol	650	U
111-44-4-----	bis(2-Chloroethyl)ether	650	U
95-57-8-----	2-Chlorophenol	650	U
541-73-1-----	1,3-Dichlorobenzene	650	U
106-46-7-----	1,4-Dichlorobenzene	650	U
95-50-1-----	1,2-Dichlorobenzene	650	U
95-48-7-----	2-Methylphenol	650	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	650	U
106-44-5-----	4-Methylphenol	650	U
621-64-7-----	N-Nitroso-di-n-propylamine	650	U
67-72-1-----	Hexachloroethane	650	U
98-95-3-----	Nitrobenzene	650	U
78-59-1-----	Isophorone	650	U
88-75-5-----	2-Nitrophenol	650	U
105-67-9-----	2,4-Dimethylphenol	650	U
111-91-1-----	bis(2-Chloroethoxy)methane	650	U
120-83-2-----	2,4-Dichlorophenol	650	U
120-82-1-----	1,2,4-Trichlorobenzene	650	U
91-20-3-----	Naphthalene	650	U
106-47-8-----	4-Chloroaniline	650	U
87-68-3-----	Hexachlorobutadiene	650	U
59-50-7-----	4-Chloro-3-methylphenol	650	U
91-57-6-----	2-Methylnaphthalene	650	U
77-47-4-----	Hexachlorocyclopentadiene	650	U
88-06-2-----	2,4,6-Trichlorophenol	650	U
95-95-4-----	2,4,5-Trichlorophenol	1600	U
91-58-7-----	2-Chloronaphthalene	650	U
88-74-4-----	2-Nitroaniline	1600	U
131-11-3-----	Dimethylphthalate	650	U
208-96-8-----	Acenaphthylene	650	U
606-20-2-----	2,6-Dinitrotoluene	650	U
99-09-2-----	3-Nitroaniline	1600	U
83-32-9-----	Acenaphthene	650	U

FORM I SV-1

OLM03.0

651

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY82

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829308
Sample wt/vol: 30.4 (g/mL) g Lab File ID: GH029308A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 50 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5-----	2,4-Dinitrophenol	1600	U
100-02-7-----	4-Nitrophenol	1600	U
132-64-9-----	Dibenzofuran	650	U
121-14-2-----	2,4-Dinitrotoluene	650	U
84-66-2-----	Diethylphthalate	650	U
7005-72-3-----	4-Chlorophenyl-phenylether	650	U
86-73-7-----	Fluorene	650	U
100-01-6-----	4-Nitroaniline	1600	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1600	U
86-30-6-----	N-nitrosodiphenylamine (1)	650	U
101-55-3-----	4-Bromophenyl-phenylether	650	U
118-74-1-----	Hexachlorobenzene	650	U
87-86-5-----	Pentachlorophenol	1600	U
85-01-8-----	Phenanthrene	650	U
120-12-7-----	Anthracene	650	U
86-74-8-----	Carbazole	650	U
84-74-2-----	Di-n-butylphthalate	650	U
206-44-0-----	Fluoranthene	650	U
129-00-0-----	Pyrene	650	U
85-68-7-----	Butylbenzylphthalate	650	U
91-94-1-----	3,3'-Dichlorobenzidine	650	U
56-55-3-----	Benzo(a)anthracene	650	U
218-01-9-----	Chrysene	650	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	72	J
117-84-0-----	Di-n-octylphthalate	650	U
205-99-2-----	Benzo(b)fluoranthene	650	U
207-08-9-----	Benzo(k)fluoranthene	650	U
50-32-8-----	Benzo(a)pyrene	650	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	650	U
53-70-3-----	Dibenzo(a,h)anthracene	650	U
191-24-2-----	Benzo(g,h,i)perylene	650	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

652

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY82

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829308
Sample wt/vol: 30.4 (g/mL) g Lab File ID: GH029308A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 50 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.1

Number TICs found: 3 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.55	4600	JAB
2.	UNKNOWN (BC)	4.79	230	JB
3.	UNKNOWN	22.84	310	J
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
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30.				

FORM I SV-TIC

OLM03.0

653

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY83

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829309

Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029309A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 63 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	890	U
111-44-4	bis(2-Chloroethyl)ether	890	U
95-57-8	2-Chlorophenol	890	U
541-73-1	1,3-Dichlorobenzene	890	U
106-46-7	1,4-Dichlorobenzene	890	U
95-50-1	1,2-Dichlorobenzene	890	U
95-48-7	2-Methylphenol	890	U
108-60-1	2,2'-oxybis(1-Chloropropane)	890	U
106-44-5	4-Methylphenol	890	U
621-64-7	N-Nitroso-di-n-propylamine	890	U
67-72-1	Hexachloroethane	890	U
98-95-3	Nitrobenzene	890	U
78-59-1	Isophorone	890	U
88-75-5	2-Nitrophenol	890	U
105-67-9	2,4-Dimethylphenol	890	U
111-91-1	bis(2-Chloroethoxy)methane	890	U
120-83-2	2,4-Dichlorophenol	890	U
120-82-1	1,2,4-Trichlorobenzene	890	U
91-20-3	Naphthalene	590	J
106-47-8	4-Chloroaniline	890	U
87-68-3	Hexachlorobutadiene	890	U
59-50-7	4-Chloro-3-methylphenol	890	U
91-57-6	2-Methylnaphthalene	2300	U
77-47-4	Hexachlorocyclopentadiene	890	U
88-06-2	2,4,6-Trichlorophenol	890	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	890	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethylphthalate	890	U
208-96-8	Acenaphthylene	660	J
606-20-2	2,6-Dinitrotoluene	890	U
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	2700	U

FORM I SV-1

OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY83

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829309

Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029309A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 63 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Number TICs found: 31

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN PAH	17.29	.260	J
2.				
3.				
4.				
5.				
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30.				

FORM I SV-TIC

OLM03.0

670

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY83

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829309

Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029309A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 63 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	890	U
111-44-4	bis(2-Chloroethyl) ether	890	U
95-57-8	2-Chlorophenol	890	U
541-73-1	1,3-Dichlorobenzene	890	U
106-46-7	1,4-Dichlorobenzene	890	U
95-50-1	1,2-Dichlorobenzene	890	U
95-48-7	2-Methylphenol	890	U
108-60-1	2,2'-oxybis(1-Chloropropane)	890	U
106-44-5	4-Methylphenol	890	U
621-64-7	N-Nitroso-di-n-propylamine	890	U
67-72-1	Hexachloroethane	890	U
98-95-3	Nitrobenzene	890	U
78-59-1	Isophorone	890	U
88-75-5	2-Nitrophenol	890	U
105-67-9	2,4-Dimethylphenol	890	U
111-91-1	bis(2-Chloroethoxy) methane	890	U
120-83-2	2,4-Dichlorophenol	890	U
120-82-1	1,2,4-Trichlorobenzene	890	U
91-20-3	Naphthalene	590	J
106-47-8	4-Chloroaniline	890	U
87-68-3	Hexachlorobutadiene	890	U
59-50-7	4-Chloro-3-methylphenol	890	U
91-57-6	2-Methylnaphthalene	2300	U
77-47-4	Hexachlorocyclopentadiene	890	U
88-06-2	2,4,6-Trichlorophenol	890	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	890	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethylphthalate	890	U
208-96-8	Acenaphthylene	660	J
606-20-2	2,6-Dinitrotoluene	890	U
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	2700	U

FORM I SV-1

OLM03.0

667

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY83

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829309
Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029309A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 63 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

51-28-5-----	2,4-Dinitrophenol	2200	U
100-02-7-----	4-Nitrophenol	2200	U
132-64-9-----	Dibenzofuran	890	U
121-14-2-----	2,4-Dinitrotoluene	890	U
84-66-2-----	Diethylphthalate	890	U
7005-72-3-----	4-Chlorophenyl-phenylether	890	U
86-73-7-----	Fluorene	1500	
100-01-6-----	4-Nitroaniline	2200	U
534-52-1-----	4,6-Dinitro-2-methylphenol	2200	U
86-30-6-----	N-nitrosodiphenylamine (1)	890	U
101-55-3-----	4-Bromophenyl-phenylether	890	U
118-74-1-----	Hexachlorobenzene	890	U
87-86-5-----	Pentachlorophenol	2200	U
85-01-8-----	Phenanthrene	2700	
120-12-7-----	Anthracene	580	J
86-74-8-----	Carbazole	890	U
84-74-2-----	Di-n-butylphthalate	890	U
206-44-0-----	Fluoranthene	760	J
129-00-0-----	Pyrene	1400	
85-68-7-----	Butylbenzylphthalate	890	U
91-94-1-----	3,3'-Dichlorobenzidine	890	U
56-55-3-----	Benzo(a)anthracene	340	J
218-01-9-----	Chrysene	350	J
117-81-7-----	bis(2-Ethylhexyl)phthalate	110	J
117-84-0-----	Di-n-octylphthalate	890	U
205-99-2-----	Benzo(b)fluoranthene	280	XJ
207-08-9-----	Benzo(k)fluoranthene	240	XJ
50-32-8-----	Benzo(a)pyrene	280	J
193-39-5-----	Indeno(1,2,3-cd)pyrene	890	U
53-70-3-----	Dibenzo(a,h)anthracene	890	U
191-24-2-----	Benzo(g,h,i)perylene	890	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

668

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY84

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829310

Sample wt/vol: 1.0 (g/mL) g Lab File ID: GR029310A62

Level: (low/med) MED Date Received: 10/25/96

% Moisture: 67 decanted: (Y/N) N Date Extracted: 11/04/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/06/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	30000	U
111-44-4	bis(2-Chloroethyl) ether	30000	U
95-57-8	2-Chlorophenol	30000	U
541-73-1	1,3-Dichlorobenzene	30000	U
106-46-7	1,4-Dichlorobenzene	30000	U
95-50-1	1,2-Dichlorobenzene	30000	U
95-48-7	2-Methylphenol	30000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	30000	U
106-44-5	4-Methylphenol	30000	U
621-64-7	N-Nitroso-di-n-propylamine	30000	U
67-72-1	Hexachloroethane	30000	U
98-95-3	Nitrobenzene	30000	U
78-59-1	Isophorone	30000	U
88-75-5	2-Nitrophenol	30000	U
105-67-9	2,4-Dimethylphenol	30000	U
111-91-1	bis(2-Chloroethoxy) methane	30000	U
120-83-2	2,4-Dichlorophenol	30000	U
120-82-1	1,2,4-Trichlorobenzene	30000	U
91-20-3	Naphthalene	250000	EB
106-47-8	4-Chloroaniline	30000	U
87-68-3	Hexachlorobutadiene	30000	U
59-50-7	4-Chloro-3-methylphenol	30000	U
91-57-6	2-Methylnaphthalene	84000	U
77-47-4	Hexachlorocyclopentadiene	30000	U
88-06-2	2,4,6-Trichlorophenol	30000	U
95-95-4	2,4,5-Trichlorophenol	76000	U
91-58-7	2-Chloronaphthalene	30000	U
88-74-4	2-Nitroaniline	76000	U
131-11-3	Dimethylphthalate	30000	U
208-96-8	Acenaphthylene	25000	J
606-20-2	2,6-Dinitrotoluene	30000	U
99-09-2	3-Nitroaniline	76000	U
83-32-9	Acenaphthene	70000	U

FORM I SV-1

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY84

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829310

Sample wt/vol: 1.0 (g/mL) g Lab File ID: GR029310A62

Level: (low/med) MED Date Received: 10/25/96

% Moisture: 67 decanted: (Y/N) N Date Extracted: 11/04/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/06/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5-----	2,4-Dinitrophenol	76000	U
100-02-7-----	4-Nitrophenol	76000	U
132-64-9-----	Dibenzofuran	30000	U
121-14-2-----	2,4-Dinitrotoluene	30000	U
84-66-2-----	Diethylphthalate	30000	U
7005-72-3-----	4-Chlorophenyl-phenylether	30000	U
86-73-7-----	Fluorene	61000	
100-01-6-----	4-Nitroaniline	76000	U
534-52-1-----	4,6-Dinitro-2-methylphenol	76000	U
86-30-6-----	N-nitrosodiphenylamine (1)	30000	U
101-55-3-----	4-Bromophenyl-phenylether	30000	U
118-74-1-----	Hexachlorobenzene	30000	U
87-86-5-----	Pentachlorophenol	76000	U
85-01-8-----	Phenanthrene	140000	B
120-12-7-----	Anthracene	28000	JB
86-74-8-----	Carbazole	30000	U
84-74-2-----	Di-n-butylphthalate	30000	U
206-44-0-----	Fluoranthene	24000	J
129-00-0-----	Pyrene	48000	
85-68-7-----	Butylbenzylphthalate	30000	U
91-94-1-----	3,3'-Dichlorobenzidine	30000	U
56-55-3-----	Benzo(a)anthracene	12000	J
218-01-9-----	Chrysene	12000	J
117-81-7-----	bis(2-Ethylhexyl)phthalate	30000	U
117-84-0-----	Di-n-octylphthalate	30000	U
205-99-2-----	Benzo(b)fluoranthene	6000	XJ
207-08-9-----	Benzo(k)fluoranthene	6800	XJ
50-32-8-----	Benzo(a)pyrene	9400	J
193-39-5-----	Indeno(1,2,3-cd)pyrene	30000	U
53-70-3-----	Dibenzo(a,h)anthracene	30000	U
191-24-2-----	Benzo(g,h,i)perylene	30000	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

733

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY84

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829310
Sample wt/vol: 1.0 (g/mL) g Lab File ID: GR029310A62
Level: (low/med) MED Date Received: 10/25/96
% Moisture: 67 decanted: (Y/N) N Date Extracted: 11/04/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/06/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 30 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.54	24000	J
2.	UNKNOWN	6.66	24000	J
3.	SUBSTITUTED BENZENE	6.94	9400	J
4.	UNKNOWN	7.05	22000	J
5.	UNKNOWN	7.16	16000	J
6. 65051-83-4	BENZENE, (1-METHYL-2-CYCLOPR	8.36	20000	NJ
7.	UNKNOWN	8.41	22000	J
8. 15677-15-3	CYCLOPROP [A] INDENE, 1,1A,6,6	8.53	9600	NJ
9.	METHYLNAPHTHALENE	9.79	23000	J
10.	UNKNOWN	9.96	9200	J
11.	METHYLNAPHTHALENE	10.03	61000	J
12.	UNKNOWN	10.65	44000	J
13.	ETHYLNAPHTHALENE	10.79	46000	J
14.	DIMETHYLNAPHTHALENE	11.02	9800	J
15.	UNKNOWN	11.13	7500	J
16.	UNKNOWN	12.30	9700	J
17.	UNKNOWN	12.40	11000	J
18.	UNKNOWN	12.55	8000	J
19.	UNKNOWN	12.62	14000	J
20.	UNKNOWN	12.75	10000	J
21.	METHYLFLUORENE	13.35	20000	J
22.	METHYLFLUORENE	13.39	12000	J
23.	METHYLFLUORENE	13.48	10000	J
24.	METHYLPHENANTHRENE	14.81	8900	J
25.	METHYLANTHRACENE	14.85	10000	J
26.	UNKNOWN	14.98	28000	J
27.	METHYLANTHRACENE	15.02	9800	J
28. 35465-71-5	2-PHENYLNAPHTHALENE	15.30	16000	NJ
29.	UNKNOWN PAH	16.11	13000	J
30.	UNKNOWN PAH	16.88	12000	J

FORM I SV-TIC

OLM03.0

734

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY84DL

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829310
Sample wt/vol: 1.0 (g/mL) g Lab File ID: GRD29310C62
Level: (low/med) MED Date Received: 10/25/96
% Moisture: 67 decanted: (Y/N) N Date Extracted: 11/04/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/06/96
Injection Volume: 2.0 (uL) Dilution Factor: 2.0
GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	61000	U
111-44-4	bis(2-Chloroethyl) ether	61000	U
95-57-8	2-Chlorophenol	61000	U
541-73-1	1,3-Dichlorobenzene	61000	U
106-46-7	1,4-Dichlorobenzene	61000	U
95-50-1	1,2-Dichlorobenzene	61000	U
95-48-7	2-Methylphenol	61000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	61000	U
106-44-5	4-Methylphenol	61000	U
621-64-7	N-Nitroso-di-n-propylamine	61000	U
67-72-1	Hexachloroethane	61000	U
98-95-3	Nitrobenzene	61000	U
78-59-1	Isophorone	61000	U
88-75-5	2-Nitrophenol	61000	U
105-67-9	2,4-Dimethylphenol	61000	U
111-91-1	bis(2-Chloroethoxy) methane	61000	U
120-83-2	2,4-Dichlorophenol	61000	U
120-82-1	1,2,4-Trichlorobenzene	61000	U
91-20-3	Naphthalene	210000	DB
106-47-8	4-Chloroaniline	61000	U
87-68-3	Hexachlorobutadiene	61000	U
59-50-7	4-Chloro-3-methylphenol	61000	U
91-57-6	2-Methylnaphthalene	68000	D
77-47-4	Hexachlorocyclopentadiene	61000	U
88-06-2	2,4,6-Trichlorophenol	61000	U
95-95-4	2,4,5-Trichlorophenol	150000	U
91-58-7	2-Chloronaphthalene	61000	U
88-74-4	2-Nitroaniline	150000	U
131-11-3	Dimethylphthalate	61000	U
208-96-8	Acenaphthylene	16000	DJ
606-20-2	2,6-Dinitrotoluene	61000	U
99-09-2	3-Nitroaniline	150000	U
83-32-9	Acenaphthene	57000	DJ

FORM I SV-1

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY84DL

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829310
Sample wt/vol: 1.0 (g/mL) g Lab File ID: GRD29310C62
Level: (low/med) MED Date Received: 10/25/96
% Moisture: 67 decanted: (Y/N) N Date Extracted: 11/04/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/06/96
Injection Volume: 2.0 (uL) Dilution Factor: 2.0
GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

51-28-5-----	2,4-Dinitrophenol	150000	U
100-02-7-----	4-Nitrophenol	150000	U
132-64-9-----	Dibenzofuran	61000	U
121-14-2-----	2,4-Dinitrotoluene	61000	U
84-66-2-----	Diethylphthalate	61000	U
7005-72-3-----	4-Chlorophenyl-phenylether	61000	U
86-73-7-----	Fluorene	48000	DJ
100-01-6-----	4-Nitroaniline	150000	U
534-52-1-----	4,6-Dinitro-2-methylphenol	150000	U
86-30-6-----	N-nitrosodiphenylamine (1)	61000	U
101-55-3-----	4-Bromophenyl-phenylether	61000	U
118-74-1-----	Hexachlorobenzene	61000	U
87-86-5-----	Pentachlorophenol	150000	U
85-01-8-----	Phenanthrene	110000	DB
120-12-7-----	Anthracene	22000	DJB
86-74-8-----	Carbazole	61000	U
84-74-2-----	Di-n-butylphthalate	61000	U
206-44-0-----	Fluoranthene	18000	DJ
129-00-0-----	Pyrene	40000	DJ
85-68-7-----	Butylbenzylphthalate	61000	U
91-94-1-----	3,3'-Dichlorobenzidine	61000	U
56-55-3-----	Benzo(a)anthracene	12000	DJ
218-01-9-----	Chrysene	9400	DJ
117-81-7-----	bis(2-Ethylhexyl)phthalate	61000	U
117-84-0-----	Di-n-octylphthalate	61000	U
205-99-2-----	Benzo(b)fluoranthene	5600	DJX
207-08-9-----	Benzo(k)fluoranthene	6200	DJX
50-32-8-----	Benzo(a)pyrene	8100	DJ
193-39-5-----	Indeno(1,2,3-cd)pyrene	61000	U
53-70-3-----	Dibenzo(a,h)anthracene	61000	U
191-24-2-----	Benzo(g,h,i)perylene	61000	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

793

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY84DL

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829310

Sample wt/vol: 1.0 (g/mL) g Lab File ID: GRD29310C62

Level: (low/med) MED Date Received: 10/25/96

% Moisture: 67 decanted: (Y/N) N Date Extracted: 11/04/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/06/96

Injection Volume: 2.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 6.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

Number TICs found: 14

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.54	21000	JD
2.	UNKNOWN	6.66	21000	JD
3.	PROPENYLBENZENE	7.04	23000	JD
4.	UNKNOWN	7.16	12000	JD
5. 767-59-9	1H-INDENE, 1-METHYL-	8.34	17000	NJD
6.	UNKNOWN	8.40	19000	JD
7.	SUBSTITUTED NAPHTHALENE	9.78	13000	JD
8.	METHYLNAPHTHALENE	10.03	53000	JD
9.	UNKNOWN	10.64	38000	JD
10.	ETHYLNAPHTHALENE	10.79	40000	JD
11.	METHYLFLUORENE	13.35	16000	JD
12.	UNKNOWN	14.98	22000	JD
13.	PHENYLNAPHTHALENE	15.31	13000	JD
14.	BENZOFLUORENE	16.87	13000	JD
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FORM I SV-TIC

OLM03.0

794

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY85

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829311

Sample wt/vol: 30.2 (g/mL) g Lab File ID: GH029311A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 58 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	780 U	
111-44-4	bis(2-Chloroethyl) ether	780 U	
95-57-8	2-Chlorophenol	780 U	
541-73-1	1,3-Dichlorobenzene	780 U	
106-46-7	1,4-Dichlorobenzene	780 U	
95-50-1	1,2-Dichlorobenzene	780 U	
95-48-7	2-Methylphenol	780 U	
108-60-1	2,2'-oxybis(1-Chloropropane)	780 U	
106-44-5	4-Methylphenol	780 U	
621-64-7	N-Nitroso-di-n-propylamine	780 U	
67-72-1	Hexachloroethane	780 U	
98-95-3	Nitrobenzene	780 U	
78-59-1	Isophorone	780 U	
88-75-5	2-Nitrophenol	780 U	
105-67-9	2,4-Dimethylphenol	780 U	
111-91-1	bis(2-Chloroethoxy) methane	780 U	
120-83-2	2,4-Dichlorophenol	780 U	
120-82-1	1,2,4-Trichlorobenzene	780 U	
91-20-3	Naphthalene	780 U	
106-47-8	4-Chloroaniline	780 U	
87-68-3	Hexachlorobutadiene	780 U	
59-50-7	4-Chloro-3-methylphenol	780 U	
91-57-6	2-Methylnaphthalene	780 U	
77-47-4	Hexachlorocyclopentadiene	780 U	
88-06-2	2,4,6-Trichlorophenol	780 U	
95-95-4	2,4,5-Trichlorophenol	2000 U	
91-58-7	2-Chloronaphthalene	780 U	
88-74-4	2-Nitroaniline	2000 U	
131-11-3	Dimethylphthalate	780 U	
208-96-8	Acenaphthylene	230 J	
606-20-2	2,6-Dinitrotoluene	780 U	
99-09-2	3-Nitroaniline	2000 U	
83-32-9	Acenaphthene	780 U	

FORM I SV-1

OLM03.0

836

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY85

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829311

Sample wt/vol: 30.2 (g/mL) g Lab File ID: GH029311A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 58 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

51-28-5-----	2,4-Dinitrophenol	2000	U
100-02-7-----	4-Nitrophenol	2000	U
132-64-9-----	Dibenzofuran	780	U
121-14-2-----	2,4-Dinitrotoluene	780	U
84-66-2-----	Diethylphthalate	780	U
7005-72-3-----	4-Chlorophenyl-phenylether	780	U
86-73-7-----	Fluorene	780	U
100-01-6-----	4-Nitroaniline	2000	U
534-52-1-----	4,6-Dinitro-2-methylphenol	2000	U
86-30-6-----	N-nitrosodiphenylamine (1)	780	U
101-55-3-----	4-Bromophenyl-phenylether	780	U
118-74-1-----	Hexachlorobenzene	780	U
87-86-5-----	Pentachlorophenol	2000	U
85-01-8-----	Phenanthrene	28	J
120-12-7-----	Anthracene	94	J
86-74-8-----	Carbazole	780	U
84-74-2-----	Di-n-butylphthalate	780	U
206-44-0-----	Fluoranthene	780	U
129-00-0-----	Pyrene	780	U
85-68-7-----	Butylbenzylphthalate	780	U
91-94-1-----	3,3'-Dichlorobenzidine	780	U
56-55-3-----	Benzo(a)anthracene	780	U
218-01-9-----	Chrysene	780	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	780	U
117-84-0-----	Di-n-octylphthalate	780	U
205-99-2-----	Benzo(b)fluoranthene	780	U
207-08-9-----	Benzo(k)fluoranthene	780	U
50-32-8-----	Benzo(a)pyrene	780	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	780	U
53-70-3-----	Dibenzo(a,h)anthracene	780	U
191-24-2-----	Benzo(g,h,i)perylene	780	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

837

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY85

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829311
Sample wt/vol: 30.2 (g/mL) g Lab File ID: GH029311A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 58 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 2 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.55	6200	JAB
2.	UNKNOWN (BC)	4.79	310	JB
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FORM I SV-TIC

OLM03.0

838

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY86

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829312
Sample wt/vol: 30.2 (g/mL) g Lab File ID: GH029312A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	630	U
111-44-4	bis(2-Chloroethyl) ether	630	U
95-57-8	2-Chlorophenol	630	U
541-73-1	1,3-Dichlorobenzene	630	U
106-46-7	1,4-Dichlorobenzene	630	U
95-50-1	1,2-Dichlorobenzene	630	U
95-48-7	2-Methylphenol	630	U
108-60-1	2,2'-oxybis(1-Chloropropane)	630	U
106-44-5	4-Methylphenol	630	U
621-64-7	N-Nitroso-di-n-propylamine	630	U
67-72-1	Hexachloroethane	630	U
98-95-3	Nitrobenzene	630	U
78-59-1	Isophorone	630	U
88-75-5	2-Nitrophenol	630	U
105-67-9	2,4-Dimethylphenol	630	U
111-91-1	bis(2-Chloroethoxy) methane	630	U
120-83-2	2,4-Dichlorophenol	630	U
120-82-1	1,2,4-Trichlorobenzene	630	U
91-20-3	Naphthalene	630	U
106-47-8	4-Chloroaniline	630	U
87-68-3	Hexachlorobutadiene	630	U
59-50-7	4-Chloro-3-methylphenol	630	U
91-57-6	2-Methylnaphthalene	630	U
77-47-4	Hexachlorocyclopentadiene	630	U
88-06-2	2,4,6-Trichlorophenol	630	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	630	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethylphthalate	630	U
208-96-8	Acenaphthylene	630	U
606-20-2	2,6-Dinitrotoluene	630	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	630	U

FORM I SV-1

OLM03.0

852

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY86

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829312

Sample wt/vol: 30.2 (g/mL) g Lab File ID: GH029312A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

51-28-5-----	2,4-Dinitrophenol	1600	U
100-02-7-----	4-Nitrophenol	1600	U
132-64-9-----	Dibenzofuran	630	U
121-14-2-----	2,4-Dinitrotoluene	630	U
84-66-2-----	Diethylphthalate	630	U
7005-72-3-----	4-Chlorophenyl-phenylether	630	U
86-73-7-----	Fluorene	630	U
100-01-6-----	4-Nitroaniline	1600	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1600	U
86-30-6-----	N-nitrosodiphenylamine (1)	630	U
101-55-3-----	4-Bromophenyl-phenylether	630	U
118-74-1-----	Hexachlorobenzene	630	U
87-86-5-----	Pentachlorophenol	1600	U
85-01-8-----	Phenanthrene	630	U
120-12-7-----	Anthracene	630	U
86-74-8-----	Carbazole	630	U
84-74-2-----	Di-n-butylphthalate	630	U
206-44-0-----	Fluoranthene	630	U
129-00-0-----	Pyrene	630	U
85-68-7-----	Butylbenzylphthalate	630	U
91-94-1-----	3,3'-Dichlorobenzidine	630	U
56-55-3-----	Benzo(a)anthracene	630	U
218-01-9-----	Chrysene	630	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	630	U
117-84-0-----	Di-n-octylphthalate	630	U
205-99-2-----	Benzo(b)fluoranthene	630	U
207-08-9-----	Benzo(k)fluoranthene	630	U
50-32-8-----	Benzo(a)pyrene	630	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	630	U
53-70-3-----	Dibenzo(a,h)anthracene	630	U
191-24-2-----	Benzo(g,h,i)perylene	630	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY86

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829312
Sample wt/vol: 30.2 (g/mL) g Lab File ID: GH029312A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.55	3600	JAB
2.	UNKNOWN (BC)	4.80	220	JB
3.	UNKNOWN CARBOXYLIC ACID	18.24	170	J
4.	UNKNOWN	20.30	180	J
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FORM I SV-TIC

OLM03.0

854

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY87

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829313

Sample wt/vol: 30.2 (g/mL) g Lab File ID: GH029313A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 64 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

108-95-2	Phenol	910	U
111-44-4	bis(2-Chloroethyl) ether	910	U
95-57-8	2-Chlorophenol	910	U
541-73-1	1,3-Dichlorobenzene	910	U
106-46-7	1,4-Dichlorobenzene	910	U
95-50-1	1,2-Dichlorobenzene	910	U
95-48-7	2-Methylphenol	910	U
108-60-1	2,2'-oxybis(1-Chloropropane)	910	U
106-44-5	4-Methylphenol	910	U
621-64-7	N-Nitroso-di-n-propylamine	910	U
67-72-1	Hexachloroethane	910	U
98-95-3	Nitrobenzene	910	U
78-59-1	Isophorone	910	U
88-75-5	2-Nitrophenol	910	U
105-67-9	2,4-Dimethylphenol	910	U
111-91-1	bis(2-Chloroethoxy) methane	910	U
120-83-2	2,4-Dichlorophenol	910	U
120-82-1	1,2,4-Trichlorobenzene	910	U
91-20-3	Naphthalene	910	U
106-47-8	4-Chloroaniline	910	U
87-68-3	Hexachlorobutadiene	910	U
59-50-7	4-Chloro-3-methylphenol	910	U
91-57-6	2-Methylnaphthalene	910	U
77-47-4	Hexachlorocyclopentadiene	910	U
88-06-2	2,4,6-Trichlorophenol	910	U
95-95-4	2,4,5-Trichlorophenol	2300	U
91-58-7	2-Chloronaphthalene	910	U
88-74-4	2-Nitroaniline	2300	U
131-11-3	Dimethylphthalate	910	U
208-96-8	Acenaphthylene	910	U
606-20-2	2,6-Dinitrotoluene	910	U
99-09-2	3-Nitroaniline	2300	U
83-32-9	Acenaphthene	910	U

FORM I SV-1

OLM03.0

867

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY87

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829313
Sample wt/vol: 30.2 (g/mL) g Lab File ID: GH029313A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 64 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5-----	2,4-Dinitrophenol	2300	U
100-02-7-----	4-Nitrophenol	2300	U
132-64-9-----	Dibenzofuran	910	U
121-14-2-----	2,4-Dinitrotoluene	910	U
84-66-2-----	Diethylphthalate	910	U
7005-72-3-----	4-Chlorophenyl-phenylether	910	U
86-73-7-----	Fluorene	910	U
100-01-6-----	4-Nitroaniline	2300	U
534-52-1-----	4,6-Dinitro-2-methylphenol	2300	U
86-30-6-----	N-nitrosodiphenylamine (1)	910	U
101-55-3-----	4-Bromophenyl-phenylether	910	U
118-74-1-----	Hexachlorobenzene	910	U
87-86-5-----	Pentachlorophenol	2300	U
85-01-8-----	Phenanthrene	910	U
120-12-7-----	Anthracene	910	U
86-74-8-----	Carbazole	910	U
84-74-2-----	Di-n-butylphthalate	910	U
206-44-0-----	Fluoranthene	910	U
129-00-0-----	Pyrene	910	U
85-68-7-----	Butylbenzylphthalate	910	U
91-94-1-----	3,3'-Dichlorobenzidine	910	U
56-55-3-----	Benzo(a)anthracene	910	U
218-01-9-----	Chrysene	910	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	120	J
117-84-0-----	Di-n-octylphthalate	910	U
205-99-2-----	Benzo(b)fluoranthene	910	U
207-08-9-----	Benzo(k)fluoranthene	910	U
50-32-8-----	Benzo(a)pyrene	910	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	910	U
53-70-3-----	Dibenzo(a,h)anthracene	910	U
191-24-2-----	Benzo(g,h,i)perylene	910	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY87

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829313
Sample wt/vol: 30.2 (g/mL) g Lab File ID: GH029313A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 64 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 5 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.55	5600	JAB
2.	UNKNOWN (BC)	4.79	340	JB
3.	UNKNOWN	18.24	270	J
4.	UNKNOWN	19.31	190	J
5.	UNKNOWN	20.29	240	J
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FORM I SV-TIC

OLM03.0

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY88

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829314

Sample wt/vol: 30.4 (g/mL) g Lab File ID: GH029314A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 71 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	ug/Kg	Q
108-95-2	Phenol	1100	U	
111-44-4	bis (2-Chloroethyl) ether	1100	U	
95-57-8	2-Chlorophenol	1100	U	
541-73-1	1,3-Dichlorobenzene	1100	U	
106-46-7	1,4-Dichlorobenzene	1100	U	
95-50-1	1,2-Dichlorobenzene	1100	U	
95-48-7	2-Methylphenol	1100	U	
108-60-1	2,2'-oxybis (1-Chloropropane)	1100	U	
106-44-5	4-Methylphenol	1100	U	
621-64-7	N-Nitroso-di-n-propylamine	1100	U	
67-72-1	Hexachloroethane	1100	U	
98-95-3	Nitrobenzene	1100	U	
78-59-1	Isophorone	1100	U	
88-75-5	2-Nitrophenol	1100	U	
105-67-9	2,4-Dimethylphenol	1100	U	
111-91-1	bis (2-Chloroethoxy) methane	1100	U	
120-83-2	2,4-Dichlorophenol	1100	U	
120-82-1	1,2,4-Trichlorobenzene	1100	U	
91-20-3	Naphthalene	1100	U	
106-47-8	4-Chloroaniline	1100	U	
87-68-3	Hexachlorobutadiene	1100	U	
59-50-7	4-Chloro-3-methylphenol	1100	U	
91-57-6	2-Methylnaphthalene	1100	U	
77-47-4	Hexachlorocyclopentadiene	1100	U	
88-06-2	2,4,6-Trichlorophenol	1100	U	
95-95-4	2,4,5-Trichlorophenol	2800	U	
91-58-7	2-Chloronaphthalene	1100	U	
88-74-4	2-Nitroaniline	2800	U	
131-11-3	Dimethylphthalate	1100	U	
208-96-8	Acenaphthylene	1100	U	
606-20-2	2,6-Dinitrotoluene	1100	U	
99-09-2	3-Nitroaniline	2800	U	
83-32-9	Acenaphthene	1100	U	

FORM I SV-1

OLM03.0

8r

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY88

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829314
Sample wt/vol: 30.4 (g/mL) g Lab File ID: GH029314A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 71 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	2800	U
100-02-7	4-Nitrophenol	2800	U
132-64-9	Dibenzofuran	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
86-73-7	Fluorene	1100	U
100-01-6	4-Nitroaniline	2800	U
534-52-1	4,6-Dinitro-2-methylphenol	2800	U
86-30-6	N-nitrosodiphenylamine (1)	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	2800	U
85-01-8	Phenanthrene	1100	U
120-12-7	Anthracene	1100	U
86-74-8	Carbazole	1100	U
84-74-2	Di-n-butylphthalate	140	J
206-44-0	Fluoranthene	1100	U
129-00-0	Pyrene	1100	U
85-68-7	Butylbenzylphthalate	1100	U
91-94-1	3,3'-Dichlorobenzidine	1100	U
56-55-3	Benzo(a)anthracene	1100	U
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	1100	U
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo(b)fluoranthene	1100	U
207-08-9	Benzo(k)fluoranthene	1100	U
50-32-8	Benzo(a)pyrene	1100	U
193-39-5	Indeno(1,2,3-cd)pyrene	1100	U
53-70-3	Dibenzo(a,h)anthracene	1100	U
191-24-2	Benzo(g,h,i)perylene	1100	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

883

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY88

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829314

Sample wt/vol: 30.4 (g/mL) g Lab File ID: GH029314A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 71 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

Number TICs found: 14

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.53	11000	JAB
2.	UNKNOWN (BC)	4.76	650	JB
3.	UNKNOWN	5.19	240	J
4.	UNKNOWN	6.67	650	J
5.	SUBSTITUTED ALCOHOL	8.65	790	J
6.	UNKNOWN	9.98	610	J
7.	UNKNOWN	16.00	270	J
8.	UNKNOWN	16.45	1000	J
9.	SUBSTITUTED PHENOL	16.48	760	J
10.	UNKNOWN	16.58	260	J
11.	UNKNOWN	17.62	660	J
12.	UNKNOWN	20.27	410	J
13.	UNKNOWN	23.42	260	J
14.	UNKNOWN	24.44	300	J
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FORM I SV-TIC

OLM03.0

884

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY89

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829016
Sample wt/vol: 30.4 (g/mL) g Lab File ID: GH029016B62
Level: (low/med) LOW Date Received: 10/23/96
% Moisture: 36 decanted: (Y/N) N Date Extracted: 10/24/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

CAS NO.	COMPOUND		
108-95-2	Phenol	510	U
111-44-4	bis (2-Chloroethyl) ether	510	U
95-57-8	2-Chlorophenol	510	U
541-73-1	1,3-Dichlorobenzene	510	U
106-46-7	1,4-Dichlorobenzene	510	U
95-50-1	1,2-Dichlorobenzene	510	U
95-48-7	2-Methylphenol	510	U
108-60-1	2,2'-oxybis (1-Chloropropane)	510	U
106-44-5	4-Methylphenol	510	U
621-64-7	N-Nitroso-di-n-propylamine	510	U
67-72-1	Hexachloroethane	510	U
98-95-3	Nitrobenzene	510	U
78-59-1	Isophorone	510	U
88-75-5	2-Nitrophenol	510	U
105-67-9	2,4-Dimethylphenol	510	U
111-91-1	bis (2-Chloroethoxy) methane	510	U
120-83-2	2,4-Dichlorophenol	510	U
120-82-1	1,2,4-Trichlorobenzene	510	U
91-20-3	Naphthalene	510	U
106-47-8	4-Chloroaniline	510	U
87-68-3	Hexachlorobutadiene	510	U
59-50-7	4-Chloro-3-methylphenol	510	U
91-57-6	2-Methylnaphthalene	510	U
77-47-4	Hexachlorocyclopentadiene	510	U
88-06-2	2,4,6-Trichlorophenol	510	U
95-95-4	2,4,5-Trichlorophenol	1300	U
91-58-7	2-Chloronaphthalene	510	U
88-74-4	2-Nitroaniline	1300	U
131-11-3	Dimethylphthalate	510	U
208-96-8	Acenaphthylene	510	U
606-20-2	2,6-Dinitrotoluene	510	U
99-09-2	3-Nitroaniline	1300	U
83-32-9	Acenaphthene	510	U

FORM I SV-1

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY89

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829016
Sample wt/vol: 30.4 (g/mL) g Lab File ID: GH029016B62
Level: (low/med) LOW Date Received: 10/23/96
% Moisture: 36 decanted: (Y/N) N Date Extracted: 10/24/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

51-28-5-----	2,4-Dinitrophenol	1300	U
100-02-7-----	4-Nitrophenol	1300	U
132-64-9-----	Dibenzofuran	510	U
121-14-2-----	2,4-Dinitrotoluene	510	U
84-66-2-----	Diethylphthalate	510	U
7005-72-3-----	4-Chlorophenyl-phenylether	510	U
86-73-7-----	Fluorene	510	U
100-01-6-----	4-Nitroaniline	1300	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1300	U
86-30-6-----	N-nitrosodiphenylamine (1)	510	U
101-55-3-----	4-Bromophenyl-phenylether	510	U
118-74-1-----	Hexachlorobenzene	510	U
87-86-5-----	Pentachlorophenol	1300	U
85-01-8-----	Phenanthrene	510	U
120-12-7-----	Anthracene	510	U
86-74-8-----	Carbazole	510	U
84-74-2-----	Di-n-butylphthalate	510	U
206-44-0-----	Fluoranthene	510	U
129-00-0-----	Pyrene	510	U
85-68-7-----	Butylbenzylphthalate	510	U
91-94-1-----	3,3'-Dichlorobenzidine	510	U
56-55-3-----	Benzo (a) anthracene	510	U
218-01-9-----	Chrysene	510	U
117-81-7-----	bis (2-Ethylhexyl) phthalate	510	U
117-84-0-----	Di-n-octylphthalate	510	U
205-99-2-----	Benzo (b) fluoranthene	510	U
207-08-9-----	Benzo (k) fluoranthene	510	U
50-32-8-----	Benzo (a) pyrene	510	U
193-39-5-----	Indeno (1,2,3-cd) pyrene	510	U
53-70-3-----	Dibenzo (a,h) anthracene	510	U
191-24-2-----	Benzo (g,h,i) perylene	510	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ02

Lab Name: COMPUCHEM ENV. CORP. Contract: 68DS0004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829318
Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029318A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 40 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

51-28-5-----	2,4-Dinitrophenol	1400	U
100-02-7-----	4-Nitrophenol	1400	U
132-64-9-----	Dibenzofuran	550	U
121-14-2-----	2,4-Dinitrotoluene	550	U
84-66-2-----	Diethylphthalate	550	U
7005-72-3-----	4-Chlorophenyl-phenylether	550	U
86-73-7-----	Fluorene	550	U
100-01-6-----	4-Nitroaniline	1400	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1400	U
86-30-6-----	N-nitrosodiphenylamine (1)	550	U
101-55-3-----	4-Bromophenyl-phenylether	550	U
118-74-1-----	Hexachlorobenzene	550	U
87-86-5-----	Pentachlorophenol	1400	U
85-01-8-----	Phenanthrene	550	U
120-12-7-----	Anthracene	550	U
86-74-8-----	Carbazole	550	U
84-74-2-----	Di-n-butylphthalate	120	J
206-44-0-----	Fluoranthene	550	U
129-00-0-----	Pyrene	550	U
85-68-7-----	Butylbenzylphthalate	550	U
91-94-1-----	3,3'-Dichlorobenzidine	550	U
56-55-3-----	Benzo (a) anthracene	550	U
218-01-9-----	Chrysene	550	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	220	J
117-84-0-----	Di-n-octylphthalate	550	U
205-99-2-----	Benzo (b) fluoranthene	550	U
207-08-9-----	Benzo (k) fluoranthene	550	U
50-32-8-----	Benzo (a) pyrene	550	U
193-39-5-----	Indeno (1,2,3-cd) pyrene	550	U
53-70-3-----	Dibenzo (a,h) anthracene	550	U
191-24-2-----	Benzo (g,h,i) perylene	550	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1235

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEZ02

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829318
Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029318A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 40 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.8

Number TICs found: 14 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.53	3300	JAB
2.	UNKNOWN (BC)	4.76	170	JB
3.	UNKNOWN	6.68	140	J
4. 149-30-4	2-MERCAPTOBENZOTHAZOLE	15.21	270	NJ
5.	UNKNOWN	16.45	890	J
6.	UNKNOWN	16.58	330	J
7.	UNKNOWN	17.62	710	J
8.	UNKNOWN	17.74	170	J
9.	UNKNOWN	17.86	240	J
10.	UNKNOWN	22.80	2000	J
11.	UNKNOWN	23.03	320	J
12.	UNKNOWN	23.43	180	J
13.	UNKNOWN	23.59	340	J
14.	UNKNOWN	24.54	210	J
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FORM 1 SV-TIC

OLM03.0

1236

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ03

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829319

Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029319A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 42 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

CAS NO.	COMPOUND		
108-95-2	Phenol	570	U
111-44-4	bis(2-Chloroethyl)ether	570	U
95-57-8	2-Chlorophenol	570	U
541-73-1	1,3-Dichlorobenzene	570	U
106-46-7	1,4-Dichlorobenzene	570	U
95-50-1	1,2-Dichlorobenzene	570	U
95-48-7	2-Methylphenol	570	U
108-60-1	2,2'-oxybis(1-Chloropropane)	570	U
106-44-5	4-Methylphenol	570	U
621-64-7	N-Nitroso-di-n-propylamine	570	U
67-72-1	Hexachloroethane	570	U
98-95-3	Nitrobenzene	570	U
78-59-1	Isophorone	570	U
88-75-5	2-Nitrophenol	570	U
105-67-9	2,4-Dimethylphenol	570	U
111-91-1	bis(2-Chloroethoxy)methane	570	U
120-83-2	2,4-Dichlorophenol	570	U
120-82-1	1,2,4-Trichlorobenzene	570	U
91-20-3	Naphthalene	570	U
106-47-8	4-Chloroaniline	570	U
87-68-3	Hexachlorobutadiene	570	U
59-50-7	4-Chloro-3-methylphenol	570	U
91-57-6	2-Methylnaphthalene	60	J
77-47-4	Hexachlorocyclopentadiene	570	U
88-06-2	2,4,6-Trichlorophenol	570	U
95-95-4	2,4,5-Trichlorophenol	1400	U
91-58-7	2-Chloronaphthalene	570	U
88-74-4	2-Nitroaniline	1400	U
131-11-3	Dimethylphthalate	570	U
208-96-8	Acenaphthylene	98	J
606-20-2	2,6-Dinitrotoluene	570	U
99-09-2	3-Nitroaniline	1400	U
83-32-9	Acenaphthene	570	U

FORM I SV-1

OLM03.0

1275

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ03

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829319

Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029319A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 42 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5-----	2,4-Dinitrophenol	1400	U
100-02-7-----	4-Nitrophenol	1400	U
132-64-9-----	Dibenzofuran	570	U
121-14-2-----	2,4-Dinitrotoluene	570	U
84-66-2-----	Diethylphthalate	570	U
7005-72-3-----	4-Chlorophenyl-phenylether	570	U
86-73-7-----	Fluorene	570	U
100-01-6-----	4-Nitroaniline	1400	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1400	U
86-30-6-----	N-nitrosodiphenylamine (1)	570	U
101-55-3-----	4-Bromophenyl-phenylether	570	U
118-74-1-----	Hexachlorobenzene	570	U
87-86-5-----	Pentachlorophenol	1400	U
85-01-8-----	Phenanthrene	570	U
120-12-7-----	Anthracene	570	U
86-74-8-----	Carbazole	570	U
84-74-2-----	Di-n-butylphthalate	58	J
206-44-0-----	Fluoranthene	570	U
129-00-0-----	Pyrene	570	U
85-68-7-----	Butylbenzylphthalate	570	U
91-94-1-----	3,3'-Dichlorobenzidine	570	U
56-55-3-----	Benzo(a)anthracene	570	U
218-01-9-----	Chrysene	570	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	100	J
117-84-0-----	Di-n-octylphthalate	570	U
205-99-2-----	Benzo(b)fluoranthene	570	U
207-08-9-----	Benzo(k)fluoranthene	570	U
50-32-8-----	Benzo(a)pyrene	570	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	570	U
53-70-3-----	Dibenzo(a,h)anthracene	570	U
191-24-2-----	Benzo(g,h,i)perylene	570	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1276

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEZ03

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829319
Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029319A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 42 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.9

Number TICs found: 11
CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.54	5200	JAB
2.	UNKNOWN (BC)	4.76	250	JB
3.	UNKNOWN	6.56	200	J
4.	UNKNOWN	6.68	240	J
5.	UNKNOWN	16.45	180	J
6.	UNKNOWN	17.62	190	J
7.	UNKNOWN	18.22	240	J
8.	UNKNOWN	22.81	2800	J
9.	UNKNOWN	23.03	400	J
10.	UNKNOWN	23.58	390	J
11.	UNKNOWN	24.54	250	J
12.				
13.				
14.				
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FORM I SV-TIC

OLM03.0

1277

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY77

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829307

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 64 decanted: (Y/N) N Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/11/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.4 Sulfur Cleanup: (Y/N) N

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

319-84-6	alpha-BHC	4.7	U
319-85-7	beta-BHC	4.7	U
319-86-8	delta-BHC	4.7	U
58-89-9	gamma-BHC (Lindane)	4.7	U
76-44-8	Heptachlor	4.7	U
309-00-2	Aldrin	4.7	U
1024-57-3	Heptachlor epoxide	4.7	U
959-98-8	Endosulfan I	0.31	JP
60-57-1	Dieldrin	9.2	U
72-55-9	4,4'-DDE	9.2	U
72-20-8	Endrin	2.5	JPB
33213-65-9	Endosulfan II	9.2	U
72-54-8	4,4'-DDD	9.2	U
1031-07-8	Endosulfan sulfate	9.2	U
50-29-3	4,4'-DDT	9.2	U
72-43-5	Methoxychlor	47	U
53494-70-5	Endrin ketone	9.2	U
7421-93-4	Endrin aldehyde	4.0	JP
5103-71-9	alpha-Chlordane	2.8	JP
5103-74-2	gamma-Chlordane	4.3	J
8001-35-2	Toxaphene	470	U
12674-11-2	Aroclor-1016	92	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	92	U
53469-21-9	Aroclor-1242	92	U
12672-29-6	Aroclor-1248	92	U
11097-69-1	Aroclor-1254	130	P
11096-82-5	Aroclor-1260	92	U

FORM I PEST

OLM03.0

1614

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY80

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829005
Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____
% Moisture: 50 decanted: (Y/N) N Date Received: 10/23/96
Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/24/96
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

319-84-6	alpha-BHC	3.4	U
319-85-7	beta-BHC	3.4	U
319-86-8	delta-BHC	0.19	JPB
58-89-9	gamma-BHC (Lindane)	3.4	U
76-44-8	Heptachlor	3.4	U
309-00-2	Aldrin	3.4	U
1024-57-3	Heptachlor epoxide	3.4	U
959-98-8	Endosulfan I	0.17	JP
60-57-1	Dieldrin	6.6	U
72-55-9	4,4'-DDE	6.6	U
72-20-8	Endrin	6.6	U
33213-65-9	Endosulfan II	6.6	U
72-54-8	4,4'-DDD	6.6	U
1031-07-8	Endosulfan sulfate	6.6	U
50-29-3	4,4'-DDT	6.6	U
72-43-5	Methoxychlor	34	U
53494-70-5	Endrin ketone	6.6	U
7421-93-4	Endrin aldehyde	0.31	JP
5103-71-9	alpha-Chlordane	3.4	U
5103-74-2	gamma-Chlordane	3.4	U
8001-35-2	Toxaphene	340	U
12674-11-2	Aroclor-1016	66	U
11104-28-2	Aroclor-1221	130	U
11141-16-5	Aroclor-1232	66	U
53469-21-9	Aroclor-1242	66	U
12672-29-6	Aroclor-1248	66	U
11097-69-1	Aroclor-1254	66	U
11096-82-5	Aroclor-1260	66	U

FORM I PEST

OLM03.0

1632

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY81

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829006
Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____
% Moisture: 48 decanted: (Y/N) N Date Received: 10/23/96
Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/24/96
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.2	U
319-85-7	beta-BHC	3.2	U
319-86-8	delta-BHC	3.2	U
58-89-9	gamma-BHC (Lindane)	3.2	U
76-44-8	Heptachlor	3.2	U
309-00-2	Aldrin	3.2	U
1024-57-3	Heptachlor epoxide	3.2	U
959-98-8	Endosulfan I	3.2	U
60-57-1	Dieldrin	0.18	JP
72-55-9	4,4'-DDE	6.3	U
72-20-8	Endrin	6.3	U
33213-65-9	Endosulfan II	6.3	U
72-54-8	4,4'-DDD	6.3	U
1031-07-8	Endosulfan sulfate	6.3	U
50-29-3	4,4'-DDT	6.3	U
72-43-5	Methoxychlor	32	U
53494-70-5	Endrin ketone	6.3	U
7421-93-4	Endrin aldehyde	6.3	U
5103-71-9	alpha-Chlordane	3.2	U
5103-74-2	gamma-Chlordane	3.2	U
8001-35-2	Toxaphene	320	U
12674-11-2	Aroclor-1016	63	U
11104-28-2	Aroclor-1221	130	U
11141-16-5	Aroclor-1232	63	U
53469-21-9	Aroclor-1242	63	U
12672-29-6	Aroclor-1248	63	U
11097-69-1	Aroclor-1254	63	U
11096-82-5	Aroclor-1260	63	U

FORM I PEST

OLM03.0

1639

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY82

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829308

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 50 decanted: (Y/N) N Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/11/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Cleanup: (Y/N) N

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

319-84-6-----	alpha-BHC	3.4	U
319-85-7-----	beta-BHC	3.4	U
319-86-8-----	delta-BHC	3.4	U
58-89-9-----	gamma-BHC (Lindane)	3.4	U
76-44-8-----	Heptachlor	3.4	U
309-00-2-----	Aldrin	3.4	U
1024-57-3-----	Heptachlor epoxide	3.4	U
959-98-8-----	Endosulfan I	0.25	JP
60-57-1-----	Dieldrin	6.6	U
72-55-9-----	4,4'-DDE	0.37	JPB
72-20-8-----	Endrin	0.35	JPB
33213-65-9-----	Endosulfan II	6.6	U
72-54-8-----	4,4'-DDD	0.24	JP
1031-07-8-----	Endosulfan sulfate	6.6	U
50-29-3-----	4,4'-DDT	6.6	U
72-43-5-----	Methoxychlor	34	U
53494-70-5-----	Endrin ketone	6.6	U
7421-93-4-----	Endrin aldehyde	0.40	JP
5103-71-9-----	alpha-Chlordane	3.4	U
5103-74-2-----	gamma-Chlordane	3.4	U
8001-35-2-----	Toxaphene	340	U
12674-11-2-----	Aroclor-1016	66	U
11104-28-2-----	Aroclor-1221	130	U
11141-16-5-----	Aroclor-1232	66	U
53469-21-9-----	Aroclor-1242	66	U
12672-29-6-----	Aroclor-1248	66	U
11097-69-1-----	Aroclor-1254	66	U
11096-82-5-----	Aroclor-1260	66	U

FORM I PEST

OLM03.0

1646

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY83

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829309

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 63 decanted: (Y/N) N Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/11/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Cleanup: (Y/N) N

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

319-84-6-----	alpha-BHC	4.6	U
319-85-7-----	beta-BHC	4.6	U
319-86-8-----	delta-BHC	0.30	JP
58-89-9-----	gamma-BHC (Lindane)	0.38	J
76-44-8-----	Heptachlor	4.6	U
309-00-2-----	Aldrin	4.6	U
1024-57-3-----	Heptachlor epoxide	0.91	JP
959-98-8-----	Endosulfan I	4.6	U
60-57-1-----	Dieldrin	0.84	JP
72-55-9-----	4,4'-DDE	1.7	JPB
72-20-8-----	Endrin	8.9	U
33213-65-9-----	Endosulfan II	1.1	JP
72-54-8-----	4,4'-DDD	8.9	U
1031-07-8-----	Endosulfan sulfate	8.9	U
50-29-3-----	4,4'-DDT	0.63	JP
72-43-5-----	Methoxychlor	0.85	JP
53494-70-5-----	Endrin ketone	8.9	U
7421-93-4-----	Endrin aldehyde	8.9	U
5103-71-9-----	alpha-Chlordane	4.6	U
5103-74-2-----	gamma-Chlordane	1.4	JP
8001-35-2-----	Toxaphene	460	U
12674-11-2-----	Aroclor-1016	89	U
11104-28-2-----	Aroclor-1221	180	U
11141-16-5-----	Aroclor-1232	89	U
53469-21-9-----	Aroclor-1242	89	U
12672-29-6-----	Aroclor-1248	89	U
11097-69-1-----	Aroclor-1254	89	U
11096-82-5-----	Aroclor-1260	89	U

FORM I PEST

OLM03.0

1653

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY89

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829016
Sample wt/vol: 30.4 (g/mL) g Lab File ID: GH029016B62
Level: (low/med) LOW Date Received: 10/23/96
% Moisture: 36 decanted: (Y/N) N Date Extracted: 10/24/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 16 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.92	7200	JAB
2.	UNKNOWN (BC)	5.16	340	JB
3.	CYCLOHEXENOL	5.59	110	J
4.	CYCLOHEXENONE	6.17	130	J
5.	UNKNOWN	16.76	180	J
6.	UNKNOWN	17.90	150	J
7.	UNKNOWN ALCOHOL	18.67	280	J
8.	UNKNOWN	19.74	410	J
9.	UNKNOWN AMIDE	20.15	130	J
10.	UNKNOWN	20.25	150	J
11.	UNKNOWN	20.30	120	J
12.	UNKNOWN	20.79	380	J
13.	UNKNOWN	22.18	120	J
14.	UNKNOWN	22.30	100	J
15.	UNKNOWN	23.35	180	J
16.	UNKNOWN	23.84	120	J
17.				
18.				
19.				
20.				
21.				
22.				
23.				
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25.				
26.				
27.				
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30.				

FORM I SV-TIC

OLM03.0

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY90

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829315
Sample wt/vol: 30.3 (g/mL) g Lab File ID: G2J29315A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 32 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	480 U	
111-44-4	bis(2-Chloroethyl) ether	480 U	
95-57-8	2-Chlorophenol	480 U	
541-73-1	1,3-Dichlorobenzene	480 U	
106-46-7	1,4-Dichlorobenzene	480 U	
95-50-1	1,2-Dichlorobenzene	480 U	
95-48-7	2-Methylphenol	480 U	
108-60-1	2,2'-oxybis(1-Chloropropane)	480 U	
106-44-5	4-Methylphenol	480 U	
621-64-7	N-Nitroso-di-n-propylamine	480 U	
67-72-1	Hexachloroethane	480 U	
98-95-3	Nitrobenzene	480 U	
78-59-1	Isophorone	480 U	
88-75-5	2-Nitrophenol	480 U	
105-67-9	2,4-Dimethylphenol	480 U	
111-91-1	bis(2-Chloroethoxy) methane	480 U	
120-83-2	2,4-Dichlorophenol	480 U	
120-82-1	1,2,4-Trichlorobenzene	480 U	
91-20-3	Naphthalene	480 U	
106-47-8	4-Chloroaniline	480 U	
87-68-3	Hexachlorobutadiene	480 U	
59-50-7	4-Chloro-3-methylphenol	480 U	
91-57-6	2-Methylnaphthalene	480 U	
77-47-4	Hexachlorocyclopentadiene	480 U	
88-06-2	2,4,6-Trichlorophenol	480 U	
95-95-4	2,4,5-Trichlorophenol	1200 U	
91-58-7	2-Chloronaphthalene	480 U	
88-74-4	2-Nitroaniline	1200 U	
131-11-3	Dimethylphthalate	480 U	
208-96-8	Acenaphthylene	480 U	
606-20-2	2,6-Dinitrotoluene	480 U	
99-09-2	3-Nitroaniline	1200 U	
83-32-9	Acenaphthene	480 U	

FORM I SV-1

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY90

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829315
Sample wt/vol: 30.3 (g/mL) g Lab File ID: G2J29315A62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 32 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

51-28-5-----	2,4-Dinitrophenol	1200	U
100-02-7-----	4-Nitrophenol	1200	U
132-64-9-----	Dibenzofuran	480	U
121-14-2-----	2,4-Dinitrotoluene	480	U
84-66-2-----	Diethylphthalate	480	U
7005-72-3-----	4-Chlorophenyl-phenylether	480	U
86-73-7-----	Fluorene	480	U
100-01-6-----	4-Nitroaniline	1200	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1200	U
86-30-6-----	N-nitrosodiphenylamine (1)	480	U
101-55-3-----	4-Bromophenyl-phenylether	480	U
118-74-1-----	Hexachlorobenzene	480	U
87-86-5-----	Pentachlorophenol	1200	U
85-01-8-----	Phenanthrene	480	U
120-12-7-----	Anthracene	480	U
86-74-8-----	Carbazole	480	U
84-74-2-----	Di-n-butylphthalate	480	U
206-44-0-----	Fluoranthene	480	U
129-00-0-----	Pyrene	480	U
85-68-7-----	Butylbenzylphthalate	480	U
91-94-1-----	3,3'-Dichlorobenzidine	480	U
56-55-3-----	Benzo(a)anthracene	480	U
218-01-9-----	Chrysene	480	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	72	J
117-84-0-----	Di-n-octylphthalate	480	U
205-99-2-----	Benzo(b)fluoranthene	480	U
207-08-9-----	Benzo(k)fluoranthene	480	U
50-32-8-----	Benzo(a)pyrene	480	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	480	U
53-70-3-----	Dibenzo(a,h)anthracene	480	U
191-24-2-----	Benzo(g,h,i)perylene	480	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY90

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY80

Matrix: (soil/water) SOIL

Lab Sample ID: 829315

Sample wt/vol: 30.3 (g/mL) g

Lab File ID: G2J29315A62

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: 32 decanted: (Y/N) N

Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 6.8

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.54	5600	JAB
2.	UNKNOWN (BC)	4.76	330	JB
3.	CYCLOHEXENONE (BC)	5.76	100	JB
4.	UNKNOWN	8.23	99	J
5.	UNKNOWN AMIDE	17.50	100	J
6.	UNKNOWN	19.84	120	J
7.				
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FORM I SV-TIC

OLM03.0

943

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY91

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829316

Sample wt/vol: 30.3 (g/mL) g Lab File ID: G2J29316A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 38 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

108-95-2	Phenol	530	U
111-44-4	bis(2-Chloroethyl) ether	530	U
95-57-8	2-Chlorophenol	530	U
541-73-1	1,3-Dichlorobenzene	530	U
106-46-7	1,4-Dichlorobenzene	530	U
95-50-1	1,2-Dichlorobenzene	530	U
95-48-7	2-Methylphenol	530	U
108-60-1	2,2'-oxybis(1-Chloropropane)	530	U
106-44-5	4-Methylphenol	530	U
621-64-7	N-Nitroso-di-n-propylamine	530	U
67-72-1	Hexachloroethane	530	U
98-95-3	Nitrobenzene	530	U
78-59-1	Isophorone	530	U
88-75-5	2-Nitrophenol	530	U
105-67-9	2,4-Dimethylphenol	530	U
111-91-1	bis(2-Chloroethoxy) methane	530	U
120-83-2	2,4-Dichlorophenol	530	U
120-82-1	1,2,4-Trichlorobenzene	530	U
91-20-3	Naphthalene	530	U
106-47-8	4-Chloroaniline	530	U
87-68-3	Hexachlorobutadiene	530	U
59-50-7	4-Chloro-3-methylphenol	530	U
91-57-6	2-Methylnaphthalene	530	U
77-47-4	Hexachlorocyclopentadiene	530	U
88-06-2	2,4,6-Trichlorophenol	530	U
95-95-4	2,4,5-Trichlorophenol	1300	U
91-58-7	2-Chloronaphthalene	530	U
88-74-4	2-Nitroaniline	1300	U
131-11-3	Dimethylphthalate	530	U
208-96-8	Acenaphthylene	530	U
606-20-2	2,6-Dinitrotoluene	530	U
99-09-2	3-Nitroaniline	1300	U
83-32-9	Acenaphthene	530	U

FORM I SV-1

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY91

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829316

Sample wt/vol: 30.3 (g/mL) g Lab File ID: G2J29316A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 38 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

51-28-5-----	2,4-Dinitrophenol	1300	U
100-02-7-----	4-Nitrophenol	1300	U
132-64-9-----	Dibenzofuran	530	U
121-14-2-----	2,4-Dinitrotoluene	530	U
84-66-2-----	Diethylphthalate	530	U
7005-72-3-----	4-Chlorophenyl-phenylether	530	U
86-73-7-----	Fluorene	530	U
100-01-6-----	4-Nitroaniline	1300	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1300	U
86-30-6-----	N-nitrosodiphenylamine (1)	530	U
101-55-3-----	4-Bromophenyl-phenylether	530	U
118-74-1-----	Hexachlorobenzene	530	U
87-86-5-----	Pentachlorophenol	1300	U
85-01-8-----	Phenanthrene	530	U
120-12-7-----	Anthracene	530	U
86-74-8-----	Carbazole	530	U
84-74-2-----	Di-n-butylphthalate	130	J
206-44-0-----	Fluoranthene	530	U
129-00-0-----	Pyrene	530	U
85-68-7-----	Butylbenzylphthalate	530	U
91-94-1-----	3,3'-Dichlorobenzidine	530	U
56-55-3-----	Benzo(a)anthracene	530	U
218-01-9-----	Chrysene	530	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	60	J
117-84-0-----	Di-n-octylphthalate	530	U
205-99-2-----	Benzo(b)fluoranthene	530	U
207-08-9-----	Benzo(k)fluoranthene	530	U
50-32-8-----	Benzo(a)pyrene	530	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	530	U
53-70-3-----	Dibenzo(a,h)anthracene	530	U
191-24-2-----	Benzo(g,h,i)perylene	530	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY91

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829316

Sample wt/vol: 30.3 (g/mL) g Lab File ID: G2J29316A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 38 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

Number TICs found: 13

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.53	3100	JAB
2.	UNKNOWN (BC)	4.76	150	JB
3. 149-30-4	2-MERCAPTOBENZOTHAZOLE	15.22	260	NJ
4.	UNKNOWN	16.45	1100	J
5.	UNKNOWN	16.58	440	J
6.	UNKNOWN ESTER	17.62	860	J
7.	UNKNOWN	17.74	180	J
8.	UNKNOWN	17.87	240	J
9.	UNKNOWN	23.42	260	J
10.	UNKNOWN	23.58	170	J
11.	UNKNOWN	24.13	170	J
12.	UNKNOWN	24.44	110	J
13.	UNKNOWN	25.55	120	J
14.				
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FORM I SV-TIC

OLM03.0

962

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY92

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829017

Sample wt/vol: 30.2 (g/mL) g Lab File ID: GJ029017A62

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: 58 decanted: (Y/N) N Date Extracted: 10/24/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	780	U
111-44-4	bis(2-Chloroethyl) ether	780	U
95-57-8	2-Chlorophenol	780	U
541-73-1	1,3-Dichlorobenzene	780	U
106-46-7	1,4-Dichlorobenzene	780	U
95-50-1	1,2-Dichlorobenzene	780	U
95-48-7	2-Methylphenol	780	U
108-60-1	2,2'-oxybis(1-Chloropropane)	780	U
106-44-5	4-Methylphenol	780	U
621-64-7	N-Nitroso-di-n-propylamine	780	U
67-72-1	Hexachloroethane	780	U
98-95-3	Nitrobenzene	780	U
78-59-1	Isophorone	780	U
88-75-5	2-Nitrophenol	780	U
105-67-9	2,4-Dimethylphenol	780	U
111-91-1	bis(2-Chloroethoxy)methane	780	U
120-83-2	2,4-Dichlorophenol	780	U
120-82-1	1,2,4-Trichlorobenzene	780	U
91-20-3	Naphthalene	780	U
106-47-8	4-Chloroaniline	780	U
87-68-3	Hexachlorobutadiene	780	U
59-50-7	4-Chloro-3-methylphenol	780	U
91-57-6	2-Methylnaphthalene	780	U
77-47-4	Hexachlorocyclopentadiene	780	U
88-06-2	2,4,6-Trichlorophenol	780	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	780	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	780	U
208-96-8	Acenaphthylene	780	U
606-20-2	2,6-Dinitrotoluene	780	U
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	780	U

FORM I SV-1

OLM03.0

1000

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY92

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829017

Sample wt/vol: 30.2 (g/mL) g Lab File ID: GJ029017A62

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: 58 decanted: (Y/N) N Date Extracted: 10/24/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

CAS NO.	COMPOUND		
51-28-5-----	2,4-Dinitrophenol	2000	U
100-02-7-----	4-Nitrophenol	2000	U
132-64-9-----	Dibenzofuran	780	U
121-14-2-----	2,4-Dinitrotoluene	780	U
84-66-2-----	Diethylphthalate	780	U
7005-72-3-----	4-Chlorophenyl-phenylether	780	U
86-73-7-----	Fluorene	780	U
100-01-6-----	4-Nitroaniline	2000	U
534-52-1-----	4,6-Dinitro-2-methylphenol	2000	U
86-30-6-----	N-nitrosodiphenylamine (1)	780	U
101-55-3-----	4-Bromophenyl-phenylether	780	U
118-74-1-----	Hexachlorobenzene	780	U
87-86-5-----	Pentachlorophenol	2000	U
85-01-8-----	Phenanthrene	780	U
120-12-7-----	Anthracene	780	U
86-74-8-----	Carbazole	780	U
84-74-2-----	Di-n-butylphthalate	780	U
206-44-0-----	Fluoranthene	37	J
129-00-0-----	Pyrene	60	J
85-68-7-----	Butylbenzylphthalate	780	U
91-94-1-----	3,3'-Dichlorobenzidine	780	U
56-55-3-----	Benzo(a)anthracene	780	U
218-01-9-----	Chrysene	780	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	780	U
117-84-0-----	Di-n-octylphthalate	780	U
205-99-2-----	Benzo(b)fluoranthene	780	U
207-08-9-----	Benzo(k)fluoranthene	780	U
50-32-8-----	Benzo(a)pyrene	780	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	780	U
53-70-3-----	Dibenzo(a,h)anthracene	780	U
191-24-2-----	Benzo(g,h,i)perylene	780	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1001

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY92

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829017

Sample wt/vol: 30.2 (g/mL) g Lab File ID: GJ029017A62

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: 58 decanted: (Y/N) N Date Extracted: 10/24/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

Number TICs found: 31

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.90	3800	JAB
2. 55134-07-1	BENZENE, (1,1,4,6,6-PENTAMET	16.09	180	J
3.	UNKNOWN	16.77	1200	J
4.	UNKNOWN	17.39	550	J
5.	UNKNOWN	17.93	2700	J
6.	UNKNOWN	18.07	340	J
7.	UNKNOWN	19.31	320	J
8. 511-05-7	9 (1H) -PHENANTHRENONE, 2,3,4,	19.55	910	NJ
9.	UNKNOWN	19.71	360	J
10.	UNKNOWN	19.87	390	J
11.	UNKNOWN	19.97	280	J
12.	UNKNOWN	20.01	360	J
13.	UNKNOWN	20.04	350	J
14.	UNKNOWN	20.10	330	J
15.	UNKNOWN	20.16	1700	J
16.	UNKNOWN	20.33	1200	J
17.	UNKNOWN	20.43	1000	J
18.	UNKNOWN	20.54	1600	J
19.	UNKNOWN	20.63	1300	J
20.	UNKNOWN	20.72	390	J
21.	UNKNOWN	20.77	1300	J
22.	UNKNOWN	20.86	620	J
23.	UNKNOWN	20.91	420	J
24.	UNKNOWN	20.97	970	J
25.	UNKNOWN	20.97	970	J
26.	UNKNOWN	21.08	370	J
27.	UNKNOWN	21.23	780	J
28.	UNKNOWN	21.39	660	J
29.	UNKNOWN	21.72	1000	J
30.	UNKNOWN	22.29	1300	J

FORM I SV-TIC

OLM03.0

1002

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY92

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829017
Sample wt/vol: 30.2 (g/mL) g Lab File ID: GJ029017A62
Level: (low/med) LOW Date Received: 10/23/96
% Moisture: 58 decanted: (Y/N) N Date Extracted: 10/24/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 31
CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	22.99	550	J
2.				
3.				
4.				
5.				
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FORM I SV-TIC

OLM03.0

1003

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY93

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829018
Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029018B62
Level: (low/med) LOW Date Received: 10/23/96
% Moisture: 43 decanted: (Y/N) N Date Extracted: 10/24/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	580 U	
111-44-4	bis(2-Chloroethyl) ether	580 U	
95-57-8	2-Chlorophenol	580 U	
541-73-1	1,3-Dichlorobenzene	580 U	
106-46-7	1,4-Dichlorobenzene	580 U	
95-50-1	1,2-Dichlorobenzene	580 U	
95-48-7	2-Methylphenol	580 U	
108-60-1	2,2'-oxybis(1-Chloropropane)	580 U	
106-44-5	4-Methylphenol	580 U	
621-64-7	N-Nitroso-di-n-propylamine	580 U	
67-72-1	Hexachloroethane	580 U	
98-95-3	Nitrobenzene	580 U	
78-59-1	Isophorone	580 U	
88-75-5	2-Nitrophenol	580 U	
105-67-9	2,4-Dimethylphenol	580 U	
111-91-1	bis(2-Chloroethoxy)methane	580 U	
120-83-2	2,4-Dichlorophenol	580 U	
120-82-1	1,2,4-Trichlorobenzene	580 U	
91-20-3	Naphthalene	580 U	
106-47-8	4-Chloroaniline	580 U	
87-68-3	Hexachlorobutadiene	580 U	
59-50-7	4-Chloro-3-methylphenol	580 U	
91-57-6	2-Methylnaphthalene	580 U	
77-47-4	Hexachlorocyclopentadiene	580 U	
88-06-2	2,4,6-Trichlorophenol	580 U	
95-95-4	2,4,5-Trichlorophenol	1400 U	
91-58-7	2-Chloronaphthalene	580 U	
88-74-4	2-Nitroaniline	1400 U	
131-11-3	Dimethylphthalate	580 U	
208-96-8	Acenaphthylene	580 U	
606-20-2	2,6-Dinitrotoluene	580 U	
99-09-2	3-Nitroaniline	1400 U	
83-32-9	Acenaphthene	580 U	

FORM I SV-1

OLM03.0

1048

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY93

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829018

Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029018B62

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: 43 decanted: (Y/N) N Date Extracted: 10/24/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5	2,4-Dinitrophenol	1400	U
100-02-7	4-Nitrophenol	1400	U
132-64-9	Dibenzofuran	580	U
121-14-2	2,4-Dinitrotoluene	580	U
84-66-2	Diethylphthalate	580	U
7005-72-3	4-Chlorophenyl-phenylether	580	U
86-73-7	Fluorene	580	U
100-01-6	4-Nitroaniline	1400	U
534-52-1	4,6-Dinitro-2-methylphenol	1400	U
86-30-6	N-nitrosodiphenylamine (1)	580	U
101-55-3	4-Bromophenyl-phenylether	580	U
118-74-1	Hexachlorobenzene	580	U
87-86-5	Pentachlorophenol	1400	U
85-01-8	Phenanthrene	580	U
120-12-7	Anthracene	580	U
86-74-8	Carbazole	580	U
84-74-2	Di-n-butylphthalate	580	U
206-44-0	Fluoranthene	61	J
129-00-0	Pyrene	170	J
85-68-7	Butylbenzylphthalate	580	U
91-94-1	3,3'-Dichlorobenzidine	580	U
56-55-3	Benzo(a)anthracene	580	U
218-01-9	Chrysene	580	U
117-81-7	bis(2-Ethylhexyl)phthalate	580	U
117-84-0	Di-n-octylphthalate	580	U
205-99-2	Benzo(b)fluoranthene	130	XJ
207-08-9	Benzo(k)fluoranthene	140	XJ
50-32-8	Benzo(a)pyrene	580	U
193-39-5	Indeno(1,2,3-cd)pyrene	580	U
53-70-3	Dibenzo(a,h)anthracene	580	U
191-24-2	Benzo(g,h,i)perylene	580	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1049

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY93

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829018

Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029018B62

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: 43 decanted: (Y/N) N Date Extracted: 10/24/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

Number TICs found: 30 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.92	7900	JAB
2.	UNKNOWN CARBOXYLIC ACID	15.45	860	J
3.	UNKNOWN	15.52	1200	J
4.	UNKNOWN	15.73	870	J
5.	UNKNOWN	15.99	820	J
6.	UNKNOWN	18.10	600	J
7.	UNKNOWN	18.25	350	J
8.	UNKNOWN	18.48	440	J
9.	TERPHENYL + UNKNOWN	18.53	420	J
10.	UNKNOWN	18.64	550	J
11.	UNKNOWN	18.71	330	J
12.	UNKNOWN	18.79	490	J
13.	UNKNOWN	18.95	360	J
14.	UNKNOWN	18.99	900	J
15.	UNKNOWN	19.10	690	J
16.	UNKNOWN	19.16	320	J
17.	UNKNOWN	19.23	910	J
18.	UNKNOWN	19.33	680	J
19.	UNKNOWN	19.38	600	J
20.	UNKNOWN	19.47	810	J
21.	UNKNOWN	19.53	380	J
22.	UNKNOWN	19.56	310	J
23.	UNKNOWN	19.61	390	J
24.	UNKNOWN	19.68	310	J
25.	UNKNOWN	19.73	970	J
26.	UNKNOWN	19.81	420	J
27.	UNKNOWN	19.88	700	J
28.	UNKNOWN	19.98	420	J
29. 54986-63-9	BENZO [C] PHENANTHRENE, 5,8-DI	20.04	500	NJ
30.	UNKNOWN	20.17	540	J

FORM I SV-TIC

OLM03.0

1050

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY93RE

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829018
Sample wt/vol: 30.1 (g/mL) g Lab File ID: GJ029018A62
Level: (low/med) LOW Date Received: 10/23/96
% Moisture: 43 decanted: (Y/N) N Date Extracted: 10/24/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	580 U	
111-44-4	bis(2-Chloroethyl) ether	580 U	
95-57-8	2-Chlorophenol	580 U	
541-73-1	1,3-Dichlorobenzene	580 U	
106-46-7	1,4-Dichlorobenzene	580 U	
95-50-1	1,2-Dichlorobenzene	580 U	
95-48-7	2-Methylphenol	580 U	
108-60-1	2,2'-oxybis(1-Chloropropane)	580 U	
106-44-5	4-Methylphenol	580 U	
621-64-7	N-Nitroso-di-n-propylamine	580 U	
67-72-1	Hexachloroethane	580 U	
98-95-3	Nitrobenzene	580 U	
78-59-1	Isophorone	580 U	
88-75-5	2-Nitrophenol	580 U	
105-67-9	2,4-Dimethylphenol	580 U	
111-91-1	bis(2-Chloroethoxy)methane	580 U	
120-83-2	2,4-Dichlorophenol	580 U	
120-82-1	1,2,4-Trichlorobenzene	580 U	
91-20-3	Naphthalene	580 U	
106-47-8	4-Chloroaniline	580 U	
87-68-3	Hexachlorobutadiene	580 U	
59-50-7	4-Chloro-3-methylphenol	580 U	
91-57-6	2-Methylnaphthalene	580 U	
77-47-4	Hexachlorocyclopentadiene	580 U	
88-06-2	2,4,6-Trichlorophenol	580 U	
95-95-4	2,4,5-Trichlorophenol	1400 U	
91-58-7	2-Chloronaphthalene	580 U	
88-74-4	2-Nitroaniline	1400 U	
131-11-3	Dimethylphthalate	580 U	
208-96-8	Acenaphthylene	580 U	
606-20-2	2,6-Dinitrotoluene	580 U	
99-09-2	3-Nitroaniline	1400 U	
83-32-9	Acenaphthene	580 U	

FORM I SV-1

OLM03.0

1098

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY93RE

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829018

Sample wt/vol: 30.1 (g/mL) g Lab File ID: GJ029018A62

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: 43 decanted: (Y/N) N Date Extracted: 10/24/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5-----	2,4-Dinitrophenol	1400	U
100-02-7-----	4-Nitrophenol	1400	U
132-64-9-----	Dibenzofuran	580	U
121-14-2-----	2,4-Dinitrotoluene	580	U
84-66-2-----	Diethylphthalate	580	U
7005-72-3-----	4-Chlorophenyl-phenylether	580	U
86-73-7-----	Fluorene	580	U
100-01-6-----	4-Nitroaniline	1400	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1400	U
86-30-6-----	N-nitrosodiphenylamine (1)	580	U
101-55-3-----	4-Bromophenyl-phenylether	580	U
118-74-1-----	Hexachlorobenzene	580	U
87-86-5-----	Pentachlorophenol	1400	U
85-01-8-----	Phenanthrene	580	U
120-12-7-----	Anthracene	580	U
86-74-8-----	Carbazole	580	U
84-74-2-----	Di-n-butylphthalate	580	U
206-44-0-----	Fluoranthene	580	U
129-00-0-----	Pyrene	94	J
85-68-7-----	Butylbenzylphthalate	580	U
91-94-1-----	3,3'-Dichlorobenzidine	580	U
56-55-3-----	Benzo(a)anthracene	580	U
218-01-9-----	Chrysene	81	J
117-81-7-----	bis(2-Ethylhexyl)phthalate	80	J
117-84-0-----	Di-n-octylphthalate	580	U
205-99-2-----	Benzo(b)fluoranthene	72	XJ
207-08-9-----	Benzo(k)fluoranthene	65	XJ
50-32-8-----	Benzo(a)pyrene	580	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	580	U
53-70-3-----	Dibenzo(a,h)anthracene	580	U
191-24-2-----	Benzo(g,h,i)perylene	580	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1099

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY93RE

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829018
Sample wt/vol: 30.1 (g/mL) g Lab File ID: GJ029018A62
Level: (low/med) LOW Date Received: 10/23/96
% Moisture: 43 decanted: (Y/N) N Date Extracted: 10/24/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.7

Number TICs found: 30 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.91	4900	JAB
2.	UNKNOWN	15.33	770	J
3.	UNKNOWN	15.36	420	J
4. 57-10-3	HEXADECANOIC ACID	15.44	680	NJ
5.	UNKNOWN	15.50	1000	J
6.	UNKNOWN	15.73	740	J
7.	UNKNOWN	15.85	460	J
8.	UNKNOWN	15.88	470	J
9.	UNKNOWN	15.97	410	J
10.	UNKNOWN	16.11	510	J
11.	UNKNOWN	16.17	400	J
12.	UNKNOWN	16.27	550	J
13.	UNKNOWN	16.76	490	J
14.	UNKNOWN	17.40	650	J
15.	UNKNOWN	18.07	690	J
16.	UNKNOWN	19.72	1200	J
17.	UNKNOWN	19.87	510	J
18.	UNKNOWN	19.96	480	J
19.	UNKNOWN	20.15	780	J
20.	UNKNOWN	20.55	700	J
21.	UNKNOWN	20.63	1100	J
22.	UNKNOWN	20.77	760	J
23.	UNKNOWN	20.86	600	J
24.	UNKNOWN	20.97	790	J
25.	UNKNOWN	20.97	790	J
26.	UNKNOWN	21.38	1400	J
27.	UNKNOWN	21.73	930	J
28.	UNKNOWN	21.99	1200	J
29.	UNKNOWN	22.29	1800	J
30.	UNKNOWN	22.99	1000	J

FORM I SV-TIC

OLM03.0

1100

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY94

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829020
Sample wt/vol: 30.0 (g/mL) g Lab File ID: GJ029020A62
Level: (low/med) LOW Date Received: 10/23/96
% Moisture: 31 decanted: (Y/N) N Date Extracted: 10/24/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2-----	Phenol	480	U
111-44-4-----	bis(2-Chloroethyl) ether	480	U
95-57-8-----	2-Chlorophenol	480	U
541-73-1-----	1,3-Dichlorobenzene	480	U
106-46-7-----	1,4-Dichlorobenzene	480	U
95-50-1-----	1,2-Dichlorobenzene	480	U
95-48-7-----	2-Methylphenol	480	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	480	U
106-44-5-----	4-Methylphenol	480	U
621-64-7-----	N-Nitroso-di-n-propylamine	480	U
67-72-1-----	Hexachloroethane	480	U
98-95-3-----	Nitrobenzene	480	U
78-59-1-----	Isophorone	480	U
88-75-5-----	2-Nitrophenol	480	U
105-67-9-----	2,4-Dimethylphenol	480	U
111-91-1-----	bis(2-Chloroethoxy)methane	480	U
120-83-2-----	2,4-Dichlorophenol	480	U
120-82-1-----	1,2,4-Trichlorobenzene	480	U
91-20-3-----	Naphthalene	480	U
106-47-8-----	4-Chloroaniline	480	U
87-68-3-----	Hexachlorobutadiene	480	U
59-50-7-----	4-Chloro-3-methylphenol	480	U
91-57-6-----	2-Methylnaphthalene	480	U
77-47-4-----	Hexachlorocyclopentadiene	480	U
88-06-2-----	2,4,6-Trichlorophenol	480	U
95-95-4-----	2,4,5-Trichlorophenol	1200	U
91-58-7-----	2-Chloronaphthalene	480	U
88-74-4-----	2-Nitroaniline	1200	U
131-11-3-----	Dimethylphthalate	480	U
208-96-8-----	Acenaphthylene	480	U
606-20-2-----	2,6-Dinitrotoluene	480	U
99-09-2-----	3-Nitroaniline	1200	U
83-32-9-----	Acenaphthene	480	U

FORM I SV-1

OLM03.0

1149

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY94

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829020

Sample wt/vol: 30.0 (g/mL) g Lab File ID: GJ029020A62

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: 31 decanted: (Y/N) N Date Extracted: 10/24/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
51-28-5-----	2,4-Dinitrophenol	1200	U
100-02-7-----	4-Nitrophenol	1200	U
132-64-9-----	Dibenzofuran	480	U
121-14-2-----	2,4-Dinitrotoluene	480	U
84-66-2-----	Diethylphthalate	480	U
7005-72-3-----	4-Chlorophenyl-phenylether	480	U
86-73-7-----	Fluorene	480	U
100-01-6-----	4-Nitroaniline	1200	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1200	U
86-30-6-----	N-nitrosodiphenylamine (1)	480	U
101-55-3-----	4-Bromophenyl-phenylether	480	U
118-74-1-----	Hexachlorobenzene	480	U
87-86-5-----	Pentachlorophenol	1200	U
85-01-8-----	Phenanthrene	480	U
120-12-7-----	Anthracene	480	U
86-74-8-----	Carbazole	480	U
84-74-2-----	Di-n-butylphthalate	480	U
206-44-0-----	Fluoranthene	480	U
129-00-0-----	Pyrene	480	U
85-68-7-----	Butylbenzylphthalate	480	U
91-94-1-----	3,3'-Dichlorobenzidine	480	U
56-55-3-----	Benzo (a) anthracene	480	U
218-01-9-----	Chrysene	480	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	60	J
117-84-0-----	Di-n-octylphthalate	480	U
205-99-2-----	Benzo (b) fluoranthene	480	U
207-08-9-----	Benzo (k) fluoranthene	480	U
50-32-8-----	Benzo (a) pyrene	480	U
193-39-5-----	Indeno (1,2,3-cd) pyrene	480	U
53-70-3-----	Dibenzo (a,h) anthracene	480	U
191-24-2-----	Benzo (g,h,i) perylene	480	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1150

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY94

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829020
Sample wt/vol: 30.0 (g/mL) g Lab File ID: GJ029020A62
Level: (low/med) LOW Date Received: 10/23/96
% Moisture: 31 decanted: (Y/N) N Date Extracted: 10/24/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 10/26/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 8 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.91	3600	JAB
2.	UNKNOWN (BC)	5.15	150	JB
3.	UNKNOWN	7.07	100	J
4.	UNKNOWN CARBOXYLIC ACID	15.42	100	J
5.	LABORATORY ARTIFACT	18.06	97	J
6.	UNKNOWN AMIDE	20.13	100	J
7.	UNKNOWN	20.29	100	J
8.	UNKNOWN	25.43	160	J
9.				
10.				
11.				
12.				
13.				
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FORM I SV-TIC

OLM03.0

1151

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ01

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829317

Sample wt/vol: 30.3 (g/mL) g Lab File ID: GD029317C62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 55 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL) Dilution Factor: 4.0 ✓

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg Q

51-28-5-----	2,4-Dinitrophenol	7300	U
100-02-7-----	4-Nitrophenol	7300	U
132-64-9-----	Dibenzofuran	2900	U
121-14-2-----	2,4-Dinitrotoluene	2900	U
84-66-2-----	Diethylphthalate	2900	U
7005-72-3-----	4-Chlorophenyl-phenylether	2900	U
86-73-7-----	Fluorene	9200	U
100-01-6-----	4-Nitroaniline	7300	U
534-52-1-----	4,6-Dinitro-2-methylphenol	7300	U
86-30-6-----	N-nitrosodiphenylamine (1)	2900	U
101-55-3-----	4-Bromophenyl-phenylether	2900	U
118-74-1-----	Hexachlorobenzene	2900	U
87-86-5-----	Pentachlorophenol	7300	U
85-01-8-----	Phenanthrene	21000	U
120-12-7-----	Anthracene	5000	U
86-74-8-----	Carbazole	2900	U
84-74-2-----	Di-n-butylphthalate	2900	U
206-44-0-----	Fluoranthene	8500	U
129-00-0-----	Pyrene	11000	U
85-68-7-----	Butylbenzylphthalate	2900	U
91-94-1-----	3,3'-Dichlorobenzidine	2900	U
56-55-3-----	Benzo (a) anthracene	4200	U
218-01-9-----	Chrysene	4900	U
117-81-7-----	bis(2-Ethylhexyl) phthalate	400	J
117-84-0-----	Di-n-octylphthalate	2900	U
205-99-2-----	Benzo (b) fluoranthene	4200	X
207-08-9-----	Benzo (k) fluoranthene	4700	X
50-32-8-----	Benzo (a) pyrene	3300	U
193-39-5-----	Indeno (1,2,3-cd) pyrene	720	J
53-70-3-----	Dibenzo (a,h) anthracene	2900	U
191-24-2-----	Benzo (g,h,i) perylene	580	J

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1166A

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ01

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829317

Sample wt/vol: 30.3 (g/mL) g Lab File ID: GD029317C62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 55 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	2900	U
111-44-4	bis(2-Chloroethyl) ether	2900	U
95-57-8	2-Chlorophenol	2900	U
541-73-1	1,3-Dichlorobenzene	2900	U
106-46-7	1,4-Dichlorobenzene	2900	U
95-50-1	1,2-Dichlorobenzene	2900	U
95-48-7	2-Methylphenol	2900	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2900	U
106-44-5	4-Methylphenol	2900	U
621-64-7	N-Nitroso-di-n-propylamine	2900	U
67-72-1	Hexachloroethane	2900	U
98-95-3	Nitrobenzene	2900	U
78-59-1	Isophorone	2900	U
88-75-5	2-Nitrophenol	2900	U
105-67-9	2,4-Dimethylphenol	2900	U
111-91-1	bis(2-Chloroethoxy)methane	2900	U
120-83-2	2,4-Dichlorophenol	2900	U
120-82-1	1,2,4-Trichlorobenzene	2900	U
91-20-3	Naphthalene	6700	
106-47-8	4-Chloroaniline	2900	U
87-68-3	Hexachlorobutadiene	2900	U
59-50-7	4-Chloro-3-methylphenol	2900	U
91-57-6	2-Methylnaphthalene	8000	
77-47-4	Hexachlorocyclopentadiene	2900	U
88-06-2	2,4,6-Trichlorophenol	2900	U
95-95-4	2,4,5-Trichlorophenol	7300	U
91-58-7	2-Chloronaphthalene	2900	U
88-74-4	2-Nitroaniline	7300	U
131-11-3	Dimethylphthalate	2900	U
208-96-8	Acenaphthylene	7300	
606-20-2	2,6-Dinitrotoluene	2900	U
99-09-2	3-Nitroaniline	7300	U
83-32-9	Acenaphthene	8800	

FORM I SV-1

OLM03.0

1166B

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEZ01

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829317
Sample wt/vol: 30.3 (g/mL) g Lab File ID: GD029317C62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: 55 decanted: (Y/N) N Date Extracted: 10/27/96
Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96
Injection Volume: 2.0 (uL) Dilution Factor: 4.0
GPC Cleanup: (Y/N) Y pH: 6.8

Number TICs found: 30 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL (BC)	4.51	7300	JAB
2.	UNKNOWN	6.56	15000	J
3.	UNKNOWN	6.68	18000	J
4.	UNKNOWN	7.28	3200	J
5.	UNKNOWN PAH	9.80	7100	J
6. 15220-85-6	1-PROPENE, 2-METHYL-, TETRAM	9.98	9200	NJ
7.	1-METHYLNAPHTHALENE	10.05	8400	J
8.	UNKNOWN	10.10	4800	J
9.	UNKNOWN	10.21	2400	J
10.	ETHYLNAPHTHALENE	10.81	7500	J
11.	UNKNOWN PAH	12.42	1800	J
12.	UNKNOWN	12.57	1600	J
13.	UNKNOWN PAH	12.83	2900	J
14.	UNKNOWN	13.30	3100	J
15.	METHYLFLUORENE	13.36	7400	J
16.	METHYLFLUORENE	13.42	3300	J
17.	UNKNOWN	13.52	4700	J
18.	UNKNOWN	13.60	3900	J
19.	UNKNOWN	13.66	2700	J
20. 2444-68-0	ANTHRACENE, 9-ETHENYL-	14.51	1900	NJ
21.	METHYLANTHRACENE	14.83	2100	J
22.	METHYLPHENANTHRENE	14.87	2400	J
23.	UNKNOWN PAH	15.00	7300	J
24.	METHYLPHENANTHRENE	15.04	2400	J
25.	PHENYLNAPHTHALENE	15.33	3600	J
26.	UNKNOWN PAH	16.13	2000	J
27.	BENZOFLUORENE	16.89	2800	J
28.	BENZOPYRENE	20.09	1800	J
29.	BENZOFLUORANTHENE	20.34	1600	J
30.	UNKNOWN	21.50	1700	J

FORM I SV-TIC

OLM03.0

1168

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ02

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829318

Sample wt/vol: 30.1 (g/mL) g Lab File ID: GH029318A62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: 40 decanted: (Y/N) N Date Extracted: 10/27/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/04/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	550	U
111-44-4	bis(2-Chloroethyl) ether	550	U
95-57-8	2-Chlorophenol	550	U
541-73-1	1,3-Dichlorobenzene	550	U
106-46-7	1,4-Dichlorobenzene	550	U
95-50-1	1,2-Dichlorobenzene	550	U
95-48-7	2-Methylphenol	550	U
108-60-1	2,2'-oxybis(1-Chloropropane)	550	U
106-44-5	4-Methylphenol	550	U
621-64-7	N-Nitroso-di-n-propylamine	550	U
67-72-1	Hexachloroethane	550	U
98-95-3	Nitrobenzene	550	U
78-59-1	Isophorone	550	U
88-75-5	2-Nitrophenol	550	U
105-67-9	2,4-Dimethylphenol	550	U
111-91-1	bis(2-Chloroethoxy) methane	550	U
120-83-2	2,4-Dichlorophenol	550	U
120-82-1	1,2,4-Trichlorobenzene	550	U
91-20-3	Naphthalene	550	U
106-47-8	4-Chloroaniline	550	U
87-68-3	Hexachlorobutadiene	550	U
59-50-7	4-Chloro-3-methylphenol	550	U
91-57-6	2-Methylnaphthalene	550	U
77-47-4	Hexachlorocyclopentadiene	550	U
88-06-2	2,4,6-Trichlorophenol	550	U
95-95-4	2,4,5-Trichlorophenol	1400	U
91-58-7	2-Chloronaphthalene	550	U
88-74-4	2-Nitroaniline	1400	U
131-11-3	Dimethylphthalate	550	U
208-96-8	Acenaphthylene	82	J
606-20-2	2,6-Dinitrotoluene	550	U
99-09-2	3-Nitroaniline	1400	U
83-32-9	Acenaphthene	550	U

FORM I SV-1

OLM03.0

1234

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY84

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829310

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 67 decanted: (Y/N) N Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/11/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND		
319-84-6	alpha-BHC	2.9	JP
319-85-7	beta-BHC	5.2	U
319-86-8	delta-BHC	2.6	JP
58-89-9	gamma-BHC (Lindane)	0.67	JP
76-44-8	Heptachlor	5.2	U
309-00-2	Aldrin	2.4	JP
1024-57-3	Heptachlor epoxide	5.2	U
959-98-8	Endosulfan I	5.2	U
60-57-1	Dieldrin	10	U
72-55-9	4,4'-DDE	10	U
72-20-8	Endrin	10	U
33213-65-9	Endosulfan II	10	U
72-54-8	4,4'-DDD	10	U
1031-07-8	Endosulfan sulfate	10	U
50-29-3	4,4'-DDT	20	P
72-43-5	Methoxychlor	52	U
53494-70-5	Endrin ketone	18	P
7421-93-4	Endrin aldehyde	10	U
5103-71-9	alpha-Chlordane	5.2	U
5103-74-2	gamma-Chlordane	5.2	U
8001-35-2	Toxaphene	520	U
12674-11-2	Aroclor-1016	100	U
11104-28-2	Aroclor-1221	200	U
11141-16-5	Aroclor-1232	100	U
53469-21-9	Aroclor-1242	100	U
12672-29-6	Aroclor-1248	100	U
11097-69-1	Aroclor-1254	100	U
11096-82-5	Aroclor-1260	100	U

FORM I PEST

OLM03.0

1663

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY85

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829311

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 58 decanted: (Y/N) N Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/11/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.0	U
319-85-7	beta-BHC	4.0	U
319-86-8	delta-BHC	4.0	U
58-89-9	gamma-BHC (Lindane)	4.0	U
76-44-8	Heptachlor	0.51	JB
309-00-2	Aldrin	4.0	U
1024-57-3	Heptachlor epoxide	4.0	U
959-98-8	Endosulfan I	4.0	U
60-57-1	Dieldrin	7.8	U
72-55-9	4,4'-DDE	0.78	JPB
72-20-8	Endrin	7.8	U
33213-65-9	Endosulfan II	7.8	U
72-54-8	4,4'-DDD	7.8	U
1031-07-8	Endosulfan sulfate	7.8	U
50-29-3	4,4'-DDT	7.8	U
72-43-5	Methoxychlor	40	U
53494-70-5	Endrin ketone	7.8	U
7421-93-4	Endrin aldehyde	7.8	U
5103-71-9	alpha-Chlordane	4.0	U
5103-74-2	gamma-Chlordane	4.0	U
8001-35-2	Toxaphene	400	U
12674-11-2	Aroclor-1016	78	U
11104-28-2	Aroclor-1221	160	U
11141-16-5	Aroclor-1232	78	U
53469-21-9	Aroclor-1242	78	U
12672-29-6	Aroclor-1248	78	U
11097-69-1	Aroclor-1254	78	U
11096-82-5	Aroclor-1260	78	U

FORM I PEST

OLM03.0

1674

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY86

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829312

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 48 decanted: (Y/N) N Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/11/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.3	U
319-85-7	beta-BHC	3.3	U
319-86-8	delta-BHC	3.3	U
58-89-9	gamma-BHC (Lindane)	3.3	U
76-44-8	Heptachlor	0.13	JPB
309-00-2	Aldrin	3.3	U
1024-57-3	Heptachlor epoxide	3.3	U
959-98-8	Endosulfan I	3.3	U
60-57-1	Dieldrin	6.3	U
72-55-9	4,4'-DDE	6.3	U
72-20-8	Endrin	6.3	U
33213-65-9	Endosulfan II	6.3	U
72-54-8	4,4'-DDD	6.3	U
1031-07-8	Endosulfan sulfate	6.3	U
50-29-3	4,4'-DDT	6.3	U
72-43-5	Methoxychlor	33	U
53494-70-5	Endrin ketone	6.3	U
7421-93-4	Endrin aldehyde	6.3	U
5103-71-9	alpha-Chlordane	3.3	U
5103-74-2	gamma-Chlordane	3.3	U
8001-35-2	Toxaphene	330	U
12674-11-2	Aroclor-1016	63	U
11104-28-2	Aroclor-1221	130	U
11141-16-5	Aroclor-1232	63	U
53469-21-9	Aroclor-1242	63	U
12672-29-6	Aroclor-1248	63	U
11097-69-1	Aroclor-1254	63	U
11096-82-5	Aroclor-1260	63	U

FORM I PEST

OLM03.0

1682

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY87

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829313

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 64 decanted: (Y/N) N Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/11/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) N

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

319-84-6	alpha-BHC	4.7	U
319-85-7	beta-BHC	4.7	U
319-86-8	delta-BHC	4.7	U
58-89-9	gamma-BHC (Lindane)	4.7	U
76-44-8	Heptachlor	4.7	U
309-00-2	Aldrin	4.7	U
1024-57-3	Heptachlor epoxide	4.7	U
959-98-8	Endosulfan I	4.7	U
60-57-1	Dieldrin	9.2	U
72-55-9	4,4'-DDE	9.2	U
72-20-8	Endrin	9.2	U
33213-65-9	Endosulfan II	9.2	U
72-54-8	4,4'-DDD	9.2	U
1031-07-8	Endosulfan sulfate	9.2	U
50-29-3	4,4'-DDT	9.2	U
72-43-5	Methoxychlor	47	U
53494-70-5	Endrin ketone	9.2	U
7421-93-4	Endrin aldehyde	9.2	U
5103-71-9	alpha-Chlordane	4.7	U
5103-74-2	gamma-Chlordane	4.7	U
8001-35-2	Toxaphene	470	U
12674-11-2	Aroclor-1016	92	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	92	U
53469-21-9	Aroclor-1242	92	U
12672-29-6	Aroclor-1248	92	U
11097-69-1	Aroclor-1254	92	U
11096-82-5	Aroclor-1260	92	U

FORM I PEST

OLM03.0

1689

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY88

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829314

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 71 decanted: (Y/N) N Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/11/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	5.9	U
319-85-7	beta-BHC	5.9	U
319-86-8	delta-BHC	5.9	U
58-89-9	gamma-BHC (Lindane)	5.9	U
76-44-8	Heptachlor	0.35	JB
309-00-2	Aldrin	5.9	U
1024-57-3	Heptachlor epoxide	5.9	U
959-98-8	Endosulfan I	5.9	U
60-57-1	Dieldrin	11	U
72-55-9	4,4'-DDE	11	U
72-20-8	Endrin	11	U
33213-65-9	Endosulfan II	11	U
72-54-8	4,4'-DDD	11	U
1031-07-8	Endosulfan sulfate	11	U
50-29-3	4,4'-DDT	11	U
72-43-5	Methoxychlor	59	U
53494-70-5	Endrin ketone	11	U
7421-93-4	Endrin aldehyde	11	U
5103-71-9	alpha-Chlordane	0.64	JP
5103-74-2	gamma-Chlordane	5.9	U
8001-35-2	Toxaphene	590	U
12674-11-2	Aroclor-1016	110	U
11104-28-2	Aroclor-1221	230	U
11141-16-5	Aroclor-1232	110	U
53469-21-9	Aroclor-1242	110	U
12672-29-6	Aroclor-1248	110	U
11097-69-1	Aroclor-1254	110	U
11096-82-5	Aroclor-1260	110	U

FORM I PEST

OLM03.0

1695

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY89

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829016

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 36 decanted: (Y/N) N Date Received: 10/23/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/24/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/01/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.6	U
319-85-7	beta-BHC	2.6	U
319-86-8	delta-BHC	0.20	JPB
58-89-9	gamma-BHC (Lindane)	2.6	U
76-44-8	Heptachlor	2.6	U
309-00-2	Aldrin	2.6	U
1024-57-3	Heptachlor epoxide	2.6	U
959-98-8	Endosulfan I	2.6	U
60-57-1	Dieldrin	5.1	U
72-55-9	4,4'-DDE	5.1	U
72-20-8	Endrin	5.1	U
33213-65-9	Endosulfan II	5.1	U
72-54-8	4,4'-DDD	0.20	JP
1031-07-8	Endosulfan sulfate	5.1	U
50-29-3	4,4'-DDT	5.1	U
72-43-5	Methoxychlor	26	U
53494-70-5	Endrin ketone	5.1	U
7421-93-4	Endrin aldehyde	0.62	JP
5103-71-9	alpha-Chlordane	2.6	U
5103-74-2	gamma-Chlordane	2.6	U
8001-35-2	Toxaphene	260	U
12674-11-2	Aroclor-1016	51	U
11104-28-2	Aroclor-1221	100	U
11141-16-5	Aroclor-1232	51	U
53469-21-9	Aroclor-1242	51	U
12672-29-6	Aroclor-1248	51	U
11097-69-1	Aroclor-1254	51	U
11096-82-5	Aroclor-1260	51	U

FORM I PEST

OLM03.0

1703

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY90

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829315

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 32 decanted: (Y/N) N Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/12/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6-----	alpha-BHC	2.5 U	
319-85-7-----	beta-BHC	2.5 U	
319-86-8-----	delta-BHC	2.5 U	
58-89-9-----	gamma-BHC (Lindane)	2.5 U	
76-44-8-----	Heptachlor	0.11 JPB	
309-00-2-----	Aldrin	2.5 U	
1024-57-3-----	Heptachlor epoxide	2.5 U	
959-98-8-----	Endosulfan I	2.5 U	
60-57-1-----	Dieldrin	4.8 U	
72-55-9-----	4,4'-DDE	4.8 U	
72-20-8-----	Endrin	4.8 U	
33213-65-9-----	Endosulfan II	4.8 U	
72-54-8-----	4,4'-DDD	4.8 U	
1031-07-8-----	Endosulfan sulfate	4.8 U	
50-29-3-----	4,4'-DDT	4.8 U	
72-43-5-----	Methoxychlor	25 U	
53494-70-5-----	Endrin ketone	4.8 U	
7421-93-4-----	Endrin aldehyde	4.8 U	
5103-71-9-----	alpha-Chlordane	2.5 U	
5103-74-2-----	gamma-Chlordane	2.5 U	
8001-35-2-----	Toxaphene	250 U	
12674-11-2-----	Aroclor-1016	48 U	
11104-28-2-----	Aroclor-1221	98 U	
11141-16-5-----	Aroclor-1232	48 U	
53469-21-9-----	Aroclor-1242	48 U	
12672-29-6-----	Aroclor-1248	48 U	
11097-69-1-----	Aroclor-1254	48 U	
11096-82-5-----	Aroclor-1260	48 U	

FORM I PEST

OLM03.0

1710

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY91

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829316

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 38 decanted: (Y/N) N Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/12/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6-----	alpha-BHC	2.7 U	
319-85-7-----	beta-BHC	2.7 U	
319-86-8-----	delta-BHC	2.7 U	
58-89-9-----	gamma-BHC (Lindane)	2.7 U	
76-44-8-----	Heptachlor	0.26 JB	
309-00-2-----	Aldrin	2.7 U	
1024-57-3-----	Heptachlor epoxide	2.7 U	
959-98-8-----	Endosulfan I	2.7 U	
60-57-1-----	Dieldrin	5.3 U	
72-55-9-----	4,4'-DDE	0.15 JPB	
72-20-8-----	Endrin	5.3 U	
33213-65-9-----	Endosulfan II	5.3 U	
72-54-8-----	4,4'-DDD	5.3 U	
1031-07-8-----	Endosulfan sulfate	5.3 U	
50-29-3-----	4,4'-DDT	5.3 U	
72-43-5-----	Methoxychlor	27 U	
53494-70-5-----	Endrin ketone	5.3 U	
7421-93-4-----	Endrin aldehyde	5.3 U	
5103-71-9-----	alpha-Chlordane	2.7 U	
5103-74-2-----	gamma-Chlordane	2.7 U	
8001-35-2-----	Toxaphene	270 U	
12674-11-2-----	Aroclor-1016	53 U	
11104-28-2-----	Aroclor-1221	110 U	
11141-16-5-----	Aroclor-1232	53 U	
53469-21-9-----	Aroclor-1242	53 U	
12672-29-6-----	Aroclor-1248	53 U	
11097-69-1-----	Aroclor-1254	53 U	
11096-82-5-----	Aroclor-1260	53 U	

FORM I PEST

OLM03.0

1716

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY92

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829017
Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____
% Moisture: 58 decanted: (Y/N) N Date Received: 10/23/96
Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/24/96
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/01/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.0	U
319-85-7	beta-BHC	4.0	U
319-86-8	delta-BHC	0.43	JPB
58-89-9	gamma-BHC (Lindane)	4.0	U
76-44-8	Heptachlor	4.0	U
309-00-2	Aldrin	4.0	U
1024-57-3	Heptachlor epoxide	4.0	U
959-98-8	Endosulfan I	4.0	U
60-57-1	Dieldrin	7.8	U
72-55-9	4,4'-DDE	0.81	JP
72-20-8	Endrin	7.8	U
33213-65-9	Endosulfan II	7.8	U
72-54-8	4,4'-DDD	3.6	JP
1031-07-8	Endosulfan sulfate	1.5	JP
50-29-3	4,4'-DDT	7.8	U
72-43-5	Methoxychlor	2.1	JP
53494-70-5	Endrin ketone	7.8	U
7421-93-4	Endrin aldehyde	1.6	JP
5103-71-9	alpha-Chlordane	4.0	U
5103-74-2	gamma-Chlordane	0.26	JP
8001-35-2	Toxaphene	400	U
12674-11-2	Aroclor-1016	78	U
11104-28-2	Aroclor-1221	160	U
11141-16-5	Aroclor-1232	78	U
53469-21-9	Aroclor-1242	78	U
12672-29-6	Aroclor-1248	78	U
11097-69-1	Aroclor-1254	78	U
11096-82-5	Aroclor-1260	78	U

FORM I PEST

OLM03.0

1723

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY93

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829018

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 43 decanted: (Y/N) N Date Received: 10/23/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/24/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/01/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.0 U	
319-85-7	beta-BHC	3.0 U	
319-86-8	delta-BHC	3.0 U	
58-89-9	gamma-BHC (Lindane)	0.26 JP	
76-44-8	Heptachlor	3.0 U	
309-00-2	Aldrin	3.0 U	
1024-57-3	Heptachlor epoxide	3.0 U	
959-98-8	Endosulfan I	3.0 U	
60-57-1	Dieldrin	0.38 JP	
72-55-9	4,4'-DDE	0.93 JP	
72-20-8	Endrin	0.23 JP	
33213-65-9	Endosulfan II	5.8 U	
72-54-8	4,4'-DDD	3.7 J	
1031-07-8	Endosulfan sulfate	5.8 U	
50-29-3	4,4'-DDT	0.98 J	
72-43-5	Methoxychlor	30 U	
53494-70-5	Endrin ketone	5.8 U	
7421-93-4	Endrin aldehyde	1.1 JP	
5103-71-9	alpha-Chlordane	0.31 JP	
5103-74-2	gamma-Chlordane	0.45 JP	
8001-35-2	Toxaphene	300 U	
12674-11-2	Aroclor-1016	58 U	
11104-28-2	Aroclor-1221	120 U	
11141-16-5	Aroclor-1232	58 U	
53469-21-9	Aroclor-1242	58 U	
12672-29-6	Aroclor-1248	58 U	
11097-69-1	Aroclor-1254	58 U	
11096-82-5	Aroclor-1260	58 U	

FORM I PEST

OLM03.0

1732

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ01

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829317
Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____
% Moisture: 55 decanted: (Y/N) N Date Received: 10/25/96
Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/12/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

319-84-6	alpha-BHC	3.8	U
319-85-7	beta-BHC	3.8	U
319-86-8	delta-BHC	3.8	U
58-89-9	gamma-BHC (Lindane)	3.8	U
76-44-8	Heptachlor	3.8	U
309-00-2	Aldrin	3.8	U
1024-57-3	Heptachlor epoxide	3.8	U
959-98-8	Endosulfan I	0.98	JP
60-57-1	Dieldrin	7.3	U
72-55-9	4,4'-DDE	7.3	U
72-20-8	Endrin	7.3	U
33213-65-9	Endosulfan II	1.8	JP
72-54-8	4,4'-DDD	7.3	U
1031-07-8	Endosulfan sulfate	7.3	U
50-29-3	4,4'-DDT	7.3	U
72-43-5	Methoxychlor	38	U
53494-70-5	Endrin ketone	7.3	U
7421-93-4	Endrin aldehyde	1.3	JP
5103-71-9	alpha-Chlordane	2.0	JP
5103-74-2	gamma-Chlordane	3.8	U
8001-35-2	Toxaphene	380	U
12674-11-2	Aroclor-1016	73	U
11104-28-2	Aroclor-1221	150	U
11141-16-5	Aroclor-1232	73	U
53469-21-9	Aroclor-1242	73	U
12672-29-6	Aroclor-1248	73	U
11097-69-1	Aroclor-1254	50	JP
11096-82-5	Aroclor-1260	73	U

FORM I PEST

OLM03.0

1748

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ02

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80

Matrix: (soil/water) SOIL Lab Sample ID: 829318

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 40 decanted: (Y/N) N Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/11/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/KG Q
319-84-6	alpha-BHC	2.8	U
319-85-7	beta-BHC	2.8	U
319-86-8	delta-BHC	2.8	U
58-89-9	gamma-BHC (Lindane)	2.8	U
76-44-8	Heptachlor	2.8	U
309-00-2	Aldrin	2.8	U
1024-57-3	Heptachlor epoxide	2.8	U
959-98-8	Endosulfan I	2.8	U
60-57-1	Dieldrin	5.5	U
72-55-9	4,4'-DDE	0.51	JPB
72-20-8	Endrin	5.5	U
33213-65-9	Endosulfan II	5.5	U
72-54-8	4,4'-DDD	5.5	U
1031-07-8	Endosulfan sulfate	5.5	U
50-29-3	4,4'-DDT	5.5	U
72-43-5	Methoxychlor	28	U
53494-70-5	Endrin ketone	5.5	U
7421-93-4	Endrin aldehyde	5.5	U
5103-71-9	alpha-Chlordane	2.8	U
5103-74-2	gamma-Chlordane	2.8	U
8001-35-2	Toxaphene	280	U
12674-11-2	Aroclor-1016	55	U
11104-28-2	Aroclor-1221	110	U
11141-16-5	Aroclor-1232	55	U
53469-21-9	Aroclor-1242	55	U
12672-29-6	Aroclor-1248	55	U
11097-69-1	Aroclor-1254	55	U
11096-82-5	Aroclor-1260	55	U

FORM I PEST

OLM03.0

1762

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEZ03

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY80
Matrix: (soil/water) SOIL Lab Sample ID: 829319
Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____
% Moisture: 42 decanted: (Y/N) N Date Received: 10/25/96
Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/05/96
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/11/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.9 Sulfur Cleanup: (Y/N) N

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

319-84-6-----	alpha-BHC	2.9	U
319-85-7-----	beta-BHC	2.9	U
319-86-8-----	delta-BHC	2.9	U
58-89-9-----	gamma-BHC (Lindane)	2.9	U
76-44-8-----	Heptachlor	2.9	U
309-00-2-----	Aldrin	2.9	U
1024-57-3-----	Heptachlor epoxide	2.9	U
959-98-8-----	Endosulfan I	2.9	U
60-57-1-----	Dieldrin	5.7	U
72-55-9-----	4,4'-DDE	5.7	U
72-20-8-----	Endrin	0.25	JPB
33213-65-9-----	Endosulfan II	5.7	U
72-54-8-----	4,4'-DDD	5.7	U
1031-07-8-----	Endosulfan sulfate	5.7	U
50-29-3-----	4,4'-DDT	5.7	U
72-43-5-----	Methoxychlor	29	U
53494-70-5-----	Endrin ketone	5.7	U
7421-93-4-----	Endrin aldehyde	5.7	U
5103-71-9-----	alpha-Chlordane	2.9	U
5103-74-2-----	gamma-Chlordane	2.9	U
8001-35-2-----	Toxaphene	290	U
12674-11-2-----	Aroclor-1016	57	U
11104-28-2-----	Aroclor-1221	120	U
11141-16-5-----	Aroclor-1232	57	U
53469-21-9-----	Aroclor-1242	57	U
12672-29-6-----	Aroclor-1248	57	U
11097-69-1-----	Aroclor-1254	57	U
11096-82-5-----	Aroclor-1260	57	U

FORM I PEST

OLM03.0

1768



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 11-19-1996
Subject: Contract Laboratory Program Data Review
From: Melvin L. Ritter, ESAT RPO, 6MD-HC
To: B. Canellas, 6SF-RA

M. Ritter
4/19

Site: STAR LAKE CANAL
Case#: 25093
SDG#: FE-Y95

The EPA Region 6 Houston Branch ESAT data validation team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review and assessment report for this case.

The data package was found to be:

- (X) Acceptable: No major problems with data package.
- () Provisional: Use of data requires caution.
Data is acceptable for Regional use. Problems are noted in the review report.
- () Unacceptable: Some or all of data should not be used.
Problems are noted in the review report.

Questions regarding the data review report can be addressed to me.

Attachments

cc: R. Flores, Region 6 CLP/TPO
M. El-feky, Region 6 Data Coordinator

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LOCKHEED MARTIN SERVICES GROUP
10101 Southwest Freeway, Suite 500
HOUSTON, TX 77074

MEMORANDUM

DATE: November 14, 1996
TO: Dr. Melvin Ritter, ESAT RPO, Region VI
FROM: Dr. Tom C. H. Chiang, ESAT ETM, Region VI
SUBJECT: CLP Data Review *Jan C.H. dg*
REF: TDF # 6-7041A
ESAT # O-1763

Attached is the data review summary for Case # 25093
SDG # FEY95
Site Star Lake Canal

COMMENTS:

I. CONTRACTUAL ASSESSMENT OF DATA PACKAGE

The hardcopy review detected the following contractual non-compliance which was not reported by CCS.

No Custody seal was present on the CSF data package (OLM03.0, F-9, 2.7.14 and 2.7.15).

II. TECHNICAL/USABILITY ASSESSMENT OF THE DATA PACKAGE

A total of 441 results were reviewed for this data package. The data package is technically acceptable.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 25093 SITE Star Lake Canal
LABORATORY COMPU NO. OF SAMPLES 5
CONTRACT# 68-D5-0004 MATRIX Water
SDG# FEY95 REVIEWER (IF NOT ESD) ESAT
SOW# RAS SOW OLM03.2 REVIEWER'S NAME Maria Missler
ACCT# 7FAXJN10 SF# FAXUZZ COMPLETION DATE November 14, 1996

SAMPLE NO. FE-Y95 FE-Y99 _____
FE-Y96 _____
FE-Y97 _____
FE-Y98 _____

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST
1. HOLDING TIMES	<u>O</u>	<u>O</u>	<u>O</u>
2. GC/MS TUNE/INSTR. PERFORM.	<u>O</u>	<u>O</u>	<u>O</u>
3. CALIBRATIONS	<u>M</u>	<u>O</u>	<u>O</u>
4. BLANKS	<u>O</u>	<u>O</u>	<u>O</u>
5. SMC/SURROGATES	<u>O</u>	<u>O</u>	<u>O</u>
6. MATRIX SPIKE/DUPLICATE	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
7. OTHER QC	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
8. INTERNAL STANDARDS	<u>O</u>	<u>M</u>	<u>N/A</u>
9. COMPOUND ID/QUANTITATION	<u>O</u>	<u>O</u>	<u>O</u>
10. PERFORMANCE/COMPLETENESS	<u>O</u>	<u>O</u>	<u>O</u>
11. OVERALL ASSESSMENT	<u>M</u>	<u>M</u>	<u>O</u>

O = Data had no problems.

M = Data qualified because of major or minor problems.

Z = Data unacceptable.

NA = Not applicable.

ACTION ITEMS:

AREA OF CONCERN: No custody seal was present on the CSF data package. One VOA compound failed technical calibration criteria. BNA sample FE-Y97 and its reanalysis had low response for one internal standard.

NOTABLE PERFORMANCE: The data package arrived 24 days early.

**COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW**

CASE 25093 SDG FEY95 SITE Star Lake Canal LAB COMPU

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

<u>No.</u>	<u>Acceptable</u>	<u>Provisional</u>	<u>Unacceptable</u>
VOA	<u>4</u>	<u>1</u>	<u></u>
BNA	<u>2</u>	<u>1</u>	<u></u>
PEST	<u>3</u>	<u></u>	<u></u>

COMMENTS: The case consisted of five water samples. The OTR/COC Record designated samples FE-Y95, FE-Y96, and FE-Y97 as rinse blanks for complete RAS organics analysis and samples FE-Y98 and FE-Y99 as field blanks for VOA analysis only. No MS/MSD analyses were required. The data package arrived at the Region 24 days early for the contractual 35-day turnaround time. Sample FE-Y99 was incorrectly listed as FE-Y92 on the OTR/COC, but the bottle tag listed the correct ID.

The laboratory failed to secure the CSF data package with a custody seal.

BNA sample FE-Y97 was reanalyzed because of a low internal standard response. The reanalysis also had a low response but should be used because of improved performance. Bis(2-ethyl-hexyl)phthalate was detected above the CRQL's in all BNA samples.

Some results are provisional for one VOA and one BNA samples because of problems with calibration and internal standard performance.

The technical usability of all reported sample results is appropriately indicated by ESAT's final data qualifiers in the attached Data Summary Tables. An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF), and the Evidence Inventory Checklist is attached to this report.

NOTE: THE FOLLOWING REVIEW NARRATIVE ADDRESSES BOTH CONTRACTUAL AND TECHNICAL ISSUES. THE ASSESSMENT MADE FOR EACH QC PARAMETER IS SOLELY BASED ON THE TECHNICAL DATA USABILITY, WHICH MAY NOT NECESSARILY BE AFFECTED BY CONTRACTUAL PROBLEMS.

1. **Holding Times:** Acceptable. All samples met the contractual and technical holding time criteria.

2. **Tuning/Performance:** Acceptable. The BFB and DFTPP analyses met GC/MS tuning criteria. The VOA and BNA sample analyses were within 12 hours of the respective BFB/DFTPP analyses. The Pest/PCB analyses met performance guidelines.

**ORGANIC QA REVIEW
CONTINUATION PAGE**

CASE 25093 SDG FEY95 SITE Star Lake Canal LAB COMPU

3. **Calibrations:** Provisional. Target compounds generally met contractual and technical criteria for all fractions with the following exception.

The acetone result is estimated for VOA sample FE-Y95 because of a technical %RSD calibration deficiency.

4. **Blanks:** Acceptable. The method, storage, and instrument blanks met contractual requirements for all fractions. One VOA method blank and the storage blank contained methylene chloride or acetone below the CRQL's. In the reviewer's opinion, the following results should be used as raised quantitation limits because of possible laboratory contamination:

methylene chloride in VOA samples FE-Y95, FE-Y96, FE-Y97, and FE-Y98; and

acetone in VOA samples FE-Y95 and FE-Y96.

Bis(2-ethylhexyl)phthalate was detected above the CRQL's (up to 6X the CRQL) in all BNA rinsate samples FE-Y95, FE-Y96, and FE-Y97. The following contaminants were detected in the equipment rinsates below the CRQL's:

acetone in VOA rinsate FE-Y97;

di-n-butylphthalate in BNA rinsates FE-Y95, FE-Y96, and FE-Y97; and

DDE in Pest/PCB rinsate FE-Y95.

Field Blanks VOA samples FE-Y98 and FE-Y99 were free of contamination.

The user should assess the effect of these contaminants on the associated field samples.

5. **System Monitoring Compounds (SMC)/Surrogates:** Acceptable. The SMC and surrogate recoveries met QC criteria except as follows.

Pest/PCB Some DCB recoveries were below the contractual advisory limit for samples FE-Y96 and FE-Y97. The reviewer did not qualify results since the DCB recoveries were within the expanded Region 6 limits.

ORGANIC QA REVIEW
CONTINUATION PAGE

CASE 25093 SDG FEY95 SITE Star Lake Canal LAB COMPU

6. Matrix Spike/Matrix Spike Duplicate: Not Applicable. MS/MSD analyses were not required for field QC samples.

7. Other QC: Not applicable.

8. Internal Standards: Provisional. The internal standard areas and retention times were within the QC limits with the following exception.

BNA The laboratory reanalyzed sample FE-Y97 for a low internal standard area, and the reanalysis had the same problem but improved response. The reviewer recommends using the reanalysis data but qualified analyte results associated with IS6 as estimated with the quantitation limits biased low.

9. Compound Identity/Quantitation: Acceptable. Phthalates and common laboratory contaminants were detected in the samples above CRQL's. Compound identification and quantitation met contractual guidelines for all samples.

The laboratory reported concentrations less than one tenth of CRQL for γ -chlordane in sample FE-Y95. The reviewer raised this unrealistic concentration to the CRQL and flagged the analyte as undetected per Region 6 guidelines.

10. Performance/Completeness: Acceptable. The data package was complete with minor deficiencies. The laboratory was contacted for correction and resubmission (see attached Telephone and FAX Record Logs). The laboratory response to the Telephone conversation is included and should be used as miscellaneous data.

11. Overall Assessment: Data are acceptable for four VOA, two BNA, and all Pest/PCB samples.

VOA The acetone result is estimated in sample FE-Y95 because of a technical calibration deficiency.

BNA Some results are estimated for sample FE-Y97RE because of a low IS response.

ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

- U Not detected at reported quantitation limit.
- N Identification is tentative.
- J Estimated value.
- R Unusable.
- ^ High biased. Actual concentration may be lower than the concentration reported.
- ✓ Low biased. Actual concentration may be higher than the concentration reported.
- F+ A false positive exists.
- F- A false negative exists.
- B This result may be high biased because of laboratory/field contamination. The reported concentration is above 5X or 10X the concentration reported in the method/field blank.
- UJ Estimated quantitation limit.
- T Identification is questionable because of absence of other commonly coexisting pesticides.
- * Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY95

Reviewer: M.Missler

Laboratory: COMPU

Matrix: WATER

Units: ug/L

VOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FEY95	FEY96	FEY97	FEY98	FEY99		
Chloromethane	10 U	10 U	10 U	10 U	10 U		
Bromomethane	10 U	10 U	10 U	10 U	10 U		
Vinyl chloride	10 U	10 U	10 U	10 U	10 U		
Chloroethane	10 U	10 U	10 U	10 U	10 U		
Methylene chloride	10 U	10 U	10 U	10 U	10 U		
Acetone	11 UJ	10 U	2 J	10 U	10 U		
Carbon disulfide	10 U	10 U	10 U	10 U	10 U		
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U		
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U		
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 U	10 U		
Chloroform	10 U	10 U	10 U	10 U	10 U		
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U		
2-Butanone	10 U	10 U	10 U	10 U	10 U		
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U		
Carbon tetrachloride	10 U	10 U	10 U	10 U	10 U		
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U		
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U		
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U		
Trichloroethene	10 U	10 U	10 U	10 U	10 U		
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U		
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U		
Benzene	10 U	10 U	10 U	10 U	10 U		
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U		
Bromoform	10 U	10 U	10 U	10 U	10 U		
4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U		
2-Hexanone	10 U	10 U	10 U	10 U	10 U		
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U		
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U		
Toluene	10 U	10 U	10 U	10 U	10 U		
Chlorobenzene	10 U	10 U	10 U	10 U	10 U		
Ethylbenzene	10 U	10 U	10 U	10 U	10 U		
Styrene	10 U	10 U	10 U	10 U	10 U		
Xylenes (total)	10 U	10 U	10 U	10 U	10 U		
Sample Volume (mL):	5	5	5	5	5		
Dilution Factor:	1	1	1	1	1		
Number of TIC's:	2	0	0	0	0		

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY95

Reviewer: M. Missler

Laboratory: COMPU

Matrix: WATER

Units: ug/L

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FEY95	FEY96	FEY97	FEY97RE			
Phenol	10 U	2 J	10 U *	2 J			
bis(2-Chloroethyl) ether	10 U	10 U	10 U *	10 U			
2-Chlorophenol	10 U	10 U	10 U *	10 U			
1,3-Dichlorobenzene	10 U	10 U	10 U *	10 U			
1,4-Dichlorobenzene	10 U	10 U	10 U *	10 U			
1,2-Dichlorobenzene	10 U	10 U	10 U *	10 U			
2-Methylphenol	10 U	10 U	10 U *	10 U			
2,2'-Oxybis(1-chloropropane)	10 U	10 U	10 U *	10 U			
4-Methylphenol	10 U	10 U	10 U *	10 U			
N-Nitroso-di-n-propylamine	10 U	10 U	10 U *	10 U			
Hexachloroethane	10 U	10 U	10 U *	10 U			
Nitrobenzene	10 U	10 U	10 U *	10 U			
Isophorone	10 U	10 U	10 U *	10 U			
2-Nitrophenol	10 U	10 U	10 U *	10 U			
2,4-Dimethylphenol	10 U	10 U	10 U *	10 U			
bis(2-Chloroethoxy) methane	10 U	10 U	10 U *	10 U			
2,4-Dichlorophenol	10 U	10 U	10 U *	10 U			
1,2,4-Trichlorobenzene	10 U	10 U	10 U *	10 U			
Naphthalene	10 U	10 U	10 U *	10 U			
4-Chloroaniline	10 U	10 U	10 U *	10 U			
Hexachlorobutadiene	10 U	10 U	10 U *	10 U			
4-Chloro-3-methylphenol	10 U	10 U	10 U *	10 U			
2-Methylnaphthalene	10 U	10 U	10 U *	10 U			
Hexachlorocyclopentadiene	10 U	10 U	10 U *	10 U			
2,4,6-Trichlorophenol	10 U	10 U	10 U *	10 U			
2,4,5-Trichlorophenol	25 U	25 U	25 U *	25 U			
2-Chloronaphthalene	10 U	10 U	10 U *	10 U			
2-Nitroaniline	25 U	25 U	25 U *	25 U			
Dimethylphthalate	10 U	10 U	10 U *	10 U			
Acenaphthylene	10 U	10 U	10 U *	10 U			
2,6-Dinitrotoluene	10 U	10 U	10 U *	10 U			
3-Nitroaniline	25 U	25 U	25 U *	25 U			
Acenaphthene	10 U	10 U	10 U *	10 U			
2,4-Dinitrophenol	25 U	25 U	25 U *	25 U			
4-Nitrophenol	25 U	25 U	25 U *	25 U			
Dibenzofuran	10 U	10 U	10 U *	10 U			
2,4-Dinitrotoluene	10 U	10 U	10 U *	10 U			
Diethylphthalate	10 U	10 U	10 U *	10 U			
4-Chlorophenyl-phenylether	10 U	10 U	10 U *	10 U			
Fluorene	10 U	10 U	10 U *	10 U			
4-Nitroaniline	25 U	25 U	25 U *	25 U			
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U *	25 U			
N-Nitrosodiphenylamine	10 U	10 U	10 U *	10 U			
4-Bromophenyl-phenylether	10 U	10 U	10 U *	10 U			
Hexachlorobenzene	10 U	10 U	10 U *	10 U			
Pentachlorophenol	25 U	25 U	25 U *	25 U			
Phenanthrene	10 U	10 U	10 U *	10 U			
Anthracene	10 U	10 U	10 U *	10 U			

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY95

Reviewer: M. Missler

Laboratory: COMPU

Matrix: WATER

Units: ug/L

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FEY95	FEY96	FEY97	FEY97RE			
Carbazole	10 U	10 U	10 U *	10 U			
Di-n-butylphthalate	3 J	2 J	2 *	10 U			
Fluoranthene	10 U	10 U	10 U *	10 U			
Pyrene	10 U	10 U	10 U *	10 U			
Butylbenzylphthalate	10 U	10 U	10 U *	10 U			
3,3'-Dichlorobenzidine	10 U	10 U	10 U *	10 U			
Benzo(a)anthracene	10 U	10 U	10 U *	10 U			
Chrysene	10 U	10 U	10 U *	10 U			
bis(2-Ethylhexyl)phthalate	23	60	18 *	14			
Di-n-octylphthalate	10 U	10 U	10 U *	10 UJv			
Benzo(b)fluoranthene	10 U	10 U	10 U *	10 UJv			
Benzo(k)fluoranthene	10 U	10 U	10 U *	10 UJv			
Benzo(a)pyrene	10 U	10 U	10 U *	10 UJv			
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U *	10 UJv			
Dibenz(a,h)anthracene	10 U	10 U	10 U *	10 UJv			
Benzo(g,h,i)perylene	10 U	10 U	10 U *	10 UJv			
Sample Volume (mL):	1000	1000	1000	1000			
Dilution Factor:	1	1	1	1			
Number of TIC's:	9	10	12	9			

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 25093 SDG No. FEY95 SDG Nos. To Follow _____ SAS No. _____ Date Rec 11/5/96

EPA Lab ID: <u>COMPU</u> Lab Location: <u>RTP, NC 27709</u> Region: <u>6</u> Audit No.: <u>25093/FEY95</u> Re_Submitted CSF? Yes _____ No <u>X</u> Box No(s): <u>1</u> COMMENTS: 4 Pages 1 and 186-198 were separation or blank pages, but they were not reported on Form DC-2. The pages between 123/124 and 417/418 were not numbered. The reviewer numbered them as 123A and 417A, respectively.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">ORIGINALS</th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> <th style="text-align: center;">N/A</th> </tr> </thead> <tbody> <tr> <td>CUSTODY SEALS</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1. Present on package?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>2. Intact upon receipt?</td> <td></td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>FORM DC-2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. Numbering scheme accurate?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>4. Are enclosed documents listed?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>5. Are listed documents enclosed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>FORM DC-1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>6. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>7. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>8. Accurate?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>CHAIN-OF-CUSTODY RECORD(s)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>9. Signed? <u>X</u></td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>10. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>TRAFFIC REPORT(s) PACKING LIST(s)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>11. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>12. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>AIRBILLS/AIRBILL STICKER</td> <td></td> <td></td> <td></td> </tr> <tr> <td>13. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>14. Signed?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>15. Dated?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>SAMPLE TAGS</td> <td></td> <td></td> <td></td> </tr> <tr> <td>16. Does DC-1 list tags as being included?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>17. Present?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>OTHER DOCUMENTS</td> <td></td> <td></td> <td></td> </tr> <tr> <td>18. Complete?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>19. Legible?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> <tr> <td>20. Original?</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>20a. If "NO", does the copy indicate where original documents are located?</td> <td style="text-align: center;">X</td> <td></td> <td></td> </tr> </tbody> </table>	ORIGINALS	YES	NO	N/A	CUSTODY SEALS				1. Present on package?		X		2. Intact upon receipt?			X	FORM DC-2				3. Numbering scheme accurate?	X			4. Are enclosed documents listed?		X		5. Are listed documents enclosed?	X			FORM DC-1				6. Present?	X			7. Complete?	X			8. Accurate?	X			CHAIN-OF-CUSTODY RECORD(s)				9. Signed? <u>X</u>	X			10. Dated?	X			TRAFFIC REPORT(s) PACKING LIST(s)				11. Signed?	X			12. Dated?	X			AIRBILLS/AIRBILL STICKER				13. Present?	X			14. Signed?	X			15. Dated?	X			SAMPLE TAGS				16. Does DC-1 list tags as being included?	X			17. Present?	X			OTHER DOCUMENTS				18. Complete?	X			19. Legible?	X			20. Original?		X		20a. If "NO", does the copy indicate where original documents are located?	X		
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Over for additional comments.

Audited by: Maria Missler
 Audited by: _____
 Audited by: _____
 Signature

Maria Missler / Data Reviewer
 Date 11/6/96
 Date _____
 Date _____
 Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____
 Entered by: _____
 Reviewed by: _____
 Signature Printed Name/Title

DC-2

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY95

Reviewer: M. Missler

Laboratory: COMPU

Matrix: WATER

Units: ug/L

PESTICIDES/PCBs	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FEY95	FEY96	FEY97				
alpha-BHC	0.05 U	0.05 U	0.05 U				
beta-BHC	0.05 U	0.05 U	0.05 U				
delta-BHC	0.05 U	0.05 U	0.05 U				
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 U				
Heptachlor	0.05 U	0.05 U	0.05 U				
Aldrin	0.05 U	0.05 U	0.05 U				
Heptachlor epoxide	0.05 U	0.05 U	0.05 U				
Endosulfan I	0.05 U	0.05 U	0.05 U				
Dieldrin	0.1 U	0.1 U	0.1 U				
4,4'-DDE	0.018 U	0.1 U	0.1 U				
Endrin	0.1 U	0.1 U	0.1 U				
Endosulfan II	0.1 U	0.1 U	0.1 U				
4,4'-DDD	0.1 U	0.1 U	0.1 U				
Endosulfan sulfate	0.1 U	0.1 U	0.1 U				
4,4'-DDT	0.1 U	0.1 U	0.1 U				
Methoxychlor	0.5 U	0.5 U	0.5 U				
Endrin ketone	0.1 U	0.1 U	0.1 U				
Endrin aldehyde	0.1 U	0.1 U	0.1 U				
alpha-Chlordane	0.05 U	0.05 U	0.05 U				
gamma-Chlordane	0.05 U	0.05 U	0.05 U				
Toxaphene	5.0 U	5.0 U	5.0 U				
Aroclor-1216	1.0 U	1.0 U	1.0 U				
Aroclor-1221	2.0 U	2.0 U	2.0 U				
Aroclor-1232	1.0 U	1.0 U	1.0 U				
Aroclor-1242	1.0 U	1.0 U	1.0 U				
Aroclor-1248	1.0 U	1.0 U	1.0 U				
Aroclor-1254	1.0 U	1.0 U	1.0 U				
Aroclor-1260	1.0 U	1.0 U	1.0 U				
Sample Volume (mL):	1000	1000	1000				
Dilution Factor:	1	1	1				

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

Lockheed Martin Services Group
ESAT Region 6

10101 Southwest Freeway, Suite 500, Houston, TX 77074
Tel: (713) 988-2995

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Richard Bloom
Firm COMPU
Address 4600 Silicon Dr.
City RTP State NC 27709
Telephone (919) 474-7000 Ext.
Fax Telephone (919) 474-7030 Ext.

Sender:

Name Maria Missler
Date November 14, 1996

Total Number of pages including this Cover Sheet 3

If you do not receive all the pages or if any pages are unclear,
please call: (713) 988-2995

MESSAGES: Resubmission request for Case 25093 SDG: FEY95 (O-1763)

Fax Model No. Brother Intelifax, Fax No. 713-988-2994

In Reference to Case No(s):
25093 SDG: FEY95 (O-1763)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: November 14, 1996
Laboratory Name: COMPU
Lab Contact: Richard Bloom

Region: 6
Regional Contact: Maria Missler - ESAT

FAX initiated by: Laboratory X Region

In reference to data for the following fractions:

CSF Deliverable Pest/PCB

Summary of Questions/Issues:

A. CSF Deliverable

The contract-required custody seal was omitted from the CSF data package (OLM03.0, F-9, 2.7.14 and 2.7.15). Please correct this oversight for future CSF package delivery.

B. PEST/PCB

INDAL48 and INDBL48, column RTX-1701, varian30: The quantitation reports (pages 619 and 621) are incomplete. Please complete and resubmit.

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM03.0, p. B-29), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items. Region 6 resubmissions may be included with CCS response or sent separately within 7 days to:

Mr. Mahmoud El-Feky
U.S. EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 988-2995.

Maria Missler
Signature

November 14, 1996
Date

Distribution: (1) Lab Copy (2) Region Copy

In Reference to Case No(s):
25093 SDG: FEY95 (O-1763)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
Telephone Record Log

Date of Call: November 13, 1996
Laboratory Name: COMPU
Lab Contact: Michael Schapira

Region: 6
Regional Contact: Maria Missler - ESAT

Call initiated by: Laboratory X Region

In reference to data for the following fractions:

BNA

Summary of Questions/Issues:

The SOW requires the laboratory to check the instrument performance before reanalyzing a sample for outlying internal standard (IS) areas. Sample FE-Y97 was reanalyzed immediately after the original analysis which failed IS area criteria. Please provide evidence for acceptable instrument performance.

Resolution:

Laboratory personnel confirmed that the instrument performance was checked with a test blank immediately after the reanalysis of sample FE-Y97. Internal standard information for the test blank confirmed acceptable instrument performance and was faxed to the reviewer on the same day of the call.

Maria Missler
Signature

November 14, 1996
Date

Distribution: (1) Lab Copy (2) Region Copy

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY95

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY95

Matrix: (soil/water) WATER

Lab Sample ID: 828988

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: CN028988A57

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. _____

Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
---------	----------	--	---

74-87-3-----	Chloromethane	10	U
74-83-9-----	Bromomethane	10	U
75-01-4-----	Vinyl Chloride	10	U
75-00-3-----	Chloroethane	10	U
75-09-2-----	Methylene Chloride	1	J
67-64-1-----	Acetone	11	B
75-15-0-----	Carbon Disulfide	10	U
75-35-4-----	1,1-Dichloroethene	10	U
75-34-3-----	1,1-Dichloroethane	10	U
540-59-0-----	1,2-Dichloroethene (total)	10	U
67-66-3-----	Chloroform	10	U
107-06-2-----	1,2-Dichloroethane	10	U
78-93-3-----	2-Butanone	10	U
71-55-6-----	1,1,1-Trichloroethane	10	U
56-23-5-----	Carbon Tetrachloride	10	U
75-27-4-----	Bromodichloromethane	10	U
78-87-5-----	1,2-Dichloropropane	10	U
10061-01-5-----	cis-1,3-Dichloropropene	10	U
79-01-6-----	Trichloroethene	10	U
124-48-1-----	Dibromochloromethane	10	U
79-00-5-----	1,1,2-Trichloroethane	10	U
71-43-2-----	Benzene	10	U
10061-02-6-----	trans-1,3-Dichloropropene	10	U
75-25-2-----	Bromoform	10	U
108-10-1-----	4-Methyl-2-Pentanone	10	U
591-78-6-----	2-Hexanone	10	U
127-18-4-----	Tetrachloroethene	10	U
79-34-5-----	1,1,2,2-Tetrachloroethane	10	U
108-88-3-----	Toluene	10	U
108-90-7-----	Chlorobenzene	10	U
100-41-4-----	Ethylbenzene	10	U
100-42-5-----	Styrene	10	U
1330-20-7-----	Xylene (Total)	10	U

FORM I VOA

OLM03.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY95

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 828988

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN028988A57

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: not dec. Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 67-63-0	ISOPROPYL ALCOHOL	8.18	8	NJ
2.	NOISE SPIKE	15.74	5	J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
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19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY96

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829000

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN029000A57

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: not dec. Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L Q

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	J
67-64-1	Acetone	5	JB
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

FORM I VOA

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY97

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY95

Matrix: (soil/water) WATER

Lab Sample ID: 829305

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: CN029305C52

Level: (low/med) LOW

Date Received: 10/25/96

% Moisture: not dec. _____

Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
---------	----------	--	---

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	1	J
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

FORM I VOA

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY98

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY95

Matrix: (soil/water) WATER

Lab Sample ID: 829003

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: CN029003B57

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: not dec. _____

Date Analyzed: 10/24/96

GC Column: DB624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
---------	----------	--	---

74-87-3-----	Chloromethane	10	U
74-83-9-----	Bromomethane	10	U
75-01-4-----	Vinyl Chloride	10	U
75-00-3-----	Chloroethane	10	U
75-09-2-----	Methylene Chloride	✓ 1	J
67-64-1-----	Acetone	10	U
75-15-0-----	Carbon Disulfide	10	U
75-35-4-----	1,1-Dichloroethene	10	U
75-34-3-----	1,1-Dichloroethane	10	U
540-59-0-----	1,2-Dichloroethene (total)	10	U
67-66-3-----	Chloroform	10	U
107-06-2-----	1,2-Dichloroethane	10	U
78-93-3-----	2-Butanone	10	U
71-55-6-----	1,1,1-Trichloroethane	10	U
56-23-5-----	Carbon Tetrachloride	10	U
75-27-4-----	Bromodichloromethane	10	U
78-87-5-----	1,2-Dichloropropane	10	U
10061-01-5-----	cis-1,3-Dichloropropene	10	U
79-01-6-----	Trichloroethene	10	U
124-48-1-----	Dibromochloromethane	10	U
79-00-5-----	1,1,2-Trichloroethane	10	U
71-43-2-----	Benzene	10	U
10061-02-6-----	trans-1,3-Dichloropropene	10	U
75-25-2-----	Bromoform	10	U
108-10-1-----	4-Methyl-2-Pentanone	10	U
591-78-6-----	2-Hexanone	10	U
127-18-4-----	Tetrachloroethene	10	U
79-34-5-----	1,1,2,2-Tetrachloroethane	10	U
108-88-3-----	Toluene	10	U
108-90-7-----	Chlorobenzene	10	U
100-41-4-----	Ethylbenzene	10	U
100-42-5-----	Styrene	10	U
1330-20-7-----	Xylene (Total)	10	U

FORM I VOA

OLM03.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY99

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829306

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN029306C52

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: not dec. Date Analyzed: 10/26/96

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/L Q
74-87-3	-----Chloromethane	10	U
74-83-9	-----Bromomethane	10	U
75-01-4	-----Vinyl Chloride	10	U
75-00-3	-----Chloroethane	10	U
75-09-2	-----Methylene Chloride	10	U
67-64-1	-----Acetone	10	U
75-15-0	-----Carbon Disulfide	10	U
75-35-4	-----1,1-Dichloroethene	10	U
75-34-3	-----1,1-Dichloroethane	10	U
540-59-0	-----1,2-Dichloroethene (total)	10	U
67-66-3	-----Chloroform	10	U
107-06-2	-----1,2-Dichloroethane	10	U
78-93-3	-----2-Butanone	10	U
71-55-6	-----1,1,1-Trichloroethane	10	U
56-23-5	-----Carbon Tetrachloride	10	U
75-27-4	-----Bromodichloromethane	10	U
78-87-5	-----1,2-Dichloropropane	10	U
10061-01-5	-----cis-1,3-Dichloropropene	10	U
79-01-6	-----Trichloroethene	10	U
124-48-1	-----Dibromochloromethane	10	U
79-00-5	-----1,1,2-Trichloroethane	10	U
71-43-2	-----Benzene	10	U
10061-02-6	-----trans-1,3-Dichloropropene	10	U
75-25-2	-----Bromoform	10	U
108-10-1	-----4-Methyl-2-Pentanone	10	U
591-78-6	-----2-Hexanone	10	U
127-18-4	-----Tetrachloroethene	10	U
79-34-5	-----1,1,2,2-Tetrachloroethane	10	U
108-88-3	-----Toluene	10	U
108-90-7	-----Chlorobenzene	10	U
100-41-4	-----Ethylbenzene	10	U
100-42-5	-----Styrene	10	U
1330-20-7	-----Xylene (Total)	10	U

FORM I VOA

OLM03.0

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY95

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 828988

Sample wt/vol: 1000 (g/mL) mL Lab File ID: GH028988A64

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 10/24/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L Q

CAS NO.	COMPOUND	
108-95-2	Phenol	10 U
111-44-4	bis(2-Chloroethyl) ether	10 U
95-57-8	2-Chlorophenol	10 U
541-73-1	1,3-Dichlorobenzene	10 U
106-46-7	1,4-Dichlorobenzene	10 U
95-50-1	1,2-Dichlorobenzene	10 U
95-48-7	2-Methylphenol	10 U
108-60-1	2,2'-oxybis(1-Chloropropane)	10 U
106-44-5	4-Methylphenol	10 U
621-64-7	N-Nitroso-di-n-propylamine	10 U
67-72-1	Hexachloroethane	10 U
98-95-3	Nitrobenzene	10 U
78-59-1	Isophorone	10 U
88-75-5	2-Nitrophenol	10 U
105-67-9	2,4-Dimethylphenol	10 U
111-91-1	bis(2-Chloroethoxy) methane	10 U
120-83-2	2,4-Dichlorophenol	10 U
120-82-1	1,2,4-Trichlorobenzene	10 U
91-20-3	Naphthalene	10 U
106-47-8	4-Chloroaniline	10 U
87-68-3	Hexachlorobutadiene	10 U
59-50-7	4-Chloro-3-methylphenol	10 U
91-57-6	2-Methylnaphthalene	10 U
77-47-4	Hexachlorocyclopentadiene	10 U
88-06-2	2,4,6-Trichlorophenol	10 U
95-95-4	2,4,5-Trichlorophenol	25 U
91-58-7	2-Chloronaphthalene	10 U
88-74-4	2-Nitroaniline	25 U
131-11-3	Dimethylphthalate	10 U
208-96-8	Acenaphthylene	10 U
606-20-2	2,6-Dinitrotoluene	10 U
99-09-2	3-Nitroaniline	25 U
83-32-9	Acenaphthene	10 U

FORM I SV-1

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY95

Lab Name: COMPUCHEM ENV. CORP.

Contract: 68D50004

Lab Code: COMPU

Case No.: 25093

SAS No.:

SDG No.: FEY95

Matrix: (soil/water) WATER

Lab Sample ID: 828988

Sample wt/vol: 1000 (g/mL) mL

Lab File ID: GH028988A64

Level: (low/med) LOW

Date Received: 10/23/96

% Moisture: _____ decanted: (Y/N) _____

Date Extracted: 10/24/96

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.

COMPOUND

Q

51-28-5-----	2,4-Dinitrophenol	25	U
100-02-7-----	4-Nitrophenol	25	U
132-64-9-----	Dibenzofuran	10	U
121-14-2-----	2,4-Dinitrotoluene	10	U
84-66-2-----	Diethylphthalate	10	U
7005-72-3-----	4-Chlorophenyl-phenylether	10	U
86-73-7-----	Fluorene	10	U
100-01-6-----	4-Nitroaniline	25	U
534-52-1-----	4,6-Dinitro-2-methylphenol	25	U
86-30-6-----	N-nitrosodiphenylamine (1)	10	U
101-55-3-----	4-Bromophenyl-phenylether	10	U
118-74-1-----	Hexachlorobenzene	10	U
87-86-5-----	Pentachlorophenol	25	U
85-01-8-----	Phenanthrene	10	U
120-12-7-----	Anthracene	10	U
86-74-8-----	Carbazole	10	U
84-74-2-----	Di-n-butylphthalate	3	J
206-44-0-----	Fluoranthene	10	U
129-00-0-----	Pyrene	10	U
85-68-7-----	Butylbenzylphthalate	10	U
91-94-1-----	3,3'-Dichlorobenzidine	10	U
56-55-3-----	Benzo(a)anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	23	U
117-84-0-----	Di-n-octylphthalate	10	U
205-99-2-----	Benzo(b)fluoranthene	10	U
207-08-9-----	Benzo(k)fluoranthene	10	U
50-32-8-----	Benzo(a)pyrene	10	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	10	U
53-70-3-----	Dibenzo(a,h)anthracene	10	U
191-24-2-----	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY95

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 828988

Sample wt/vol: 1000 (g/mL) mL Lab File ID: GH028988A64

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 10/24/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 9 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALCOHOL	5.93	49	J
2.	UNKNOWN ALCOHOL	6.09	3	J
3.	CYCLOHEXENOL	8.12	7	J
4.	UNKNOWN	8.35	2	J
5. 65-85-0	BENZOIC ACID	9.04	4	NJ
6.	UNKNOWN	9.78	5	J
7.	LABORATORY ARTIFACT	11.07	4	J
8.	CYCLOHEXENOL	13.30	3	J
9.	UNKNOWN	15.48	3	J
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FORM I SV-TIC

OLM03.0

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY96

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829000

Sample wt/vol: 1000 (g/mL) mL Lab File ID: GH029000A64

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 10/24/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L Q

108-95-2-----	Phenol	2	J
111-44-4-----	bis(2-Chloroethyl) ether	10	U
95-57-8-----	2-Chlorophenol	10	U
541-73-1-----	1,3-Dichlorobenzene	10	U
106-46-7-----	1,4-Dichlorobenzene	10	U
95-50-1-----	1,2-Dichlorobenzene	10	U
95-48-7-----	2-Methylphenol	10	U
108-60-1-----	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5-----	4-Methylphenol	10	U
621-64-7-----	N-Nitroso-di-n-propylamine	10	U
67-72-1-----	Hexachloroethane	10	U
98-95-3-----	Nitrobenzene	10	U
78-59-1-----	Isophorone	10	U
88-75-5-----	2-Nitrophenol	10	U
105-67-9-----	2,4-Dimethylphenol	10	U
111-91-1-----	bis(2-Chloroethoxy) methane	10	U
120-83-2-----	2,4-Dichlorophenol	10	U
120-82-1-----	1,2,4-Trichlorobenzene	10	U
91-20-3-----	Naphthalene	10	U
106-47-8-----	4-Chloroaniline	10	U
87-68-3-----	Hexachlorobutadiene	10	U
59-50-7-----	4-Chloro-3-methylphenol	10	U
91-57-6-----	2-Methylnaphthalene	10	U
77-47-4-----	Hexachlorocyclopentadiene	10	U
88-06-2-----	2,4,6-Trichlorophenol	10	U
95-95-4-----	2,4,5-Trichlorophenol	25	U
91-58-7-----	2-Chloronaphthalene	10	U
88-74-4-----	2-Nitroaniline	25	U
131-11-3-----	Dimethylphthalate	10	U
208-96-8-----	Acenaphthylene	10	U
606-20-2-----	2,6-Dinitrotoluene	10	U
99-09-2-----	3-Nitroaniline	25	U
83-32-9-----	Acenaphthene	10	U

FORM I SV-1

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY96

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829000

Sample wt/vol: 1000 (g/mL) mL Lab File ID: GH029000A64

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 10/24/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
51-28-5-----	2,4-Dinitrophenol	25 U	
100-02-7-----	4-Nitrophenol	25 U	
132-64-9-----	Dibenzofuran	10 U	
121-14-2-----	2,4-Dinitrotoluene	10 U	
84-66-2-----	Diethylphthalate	10 U	
7005-72-3-----	4-Chlorophenyl-phenylether	10 U	
86-73-7-----	Fluorene	10 U	
100-01-6-----	4-Nitroaniline	25 U	
534-52-1-----	4,6-Dinitro-2-methylphenol	25 U	
86-30-6-----	N-nitrosodiphenylamine (1)	10 U	
101-55-3-----	4-Bromophenyl-phenylether	10 U	
118-74-1-----	Hexachlorobenzene	10 U	
87-86-5-----	Pentachlorophenol	25 U	
85-01-8-----	Phenanthrene	10 U	
120-12-7-----	Anthracene	10 U	
86-74-8-----	Carbazole	10 U	
84-74-2-----	Di-n-butylphthalate	2 J	
206-44-0-----	Fluoranthene	10 U	
129-00-0-----	Pyrene	10 U	
85-68-7-----	Butylbenzylphthalate	10 U	
91-94-1-----	3,3'-Dichlorobenzidine	10 U	
56-55-3-----	Benzo(a)anthracene	10 U	
218-01-9-----	Chrysene	10 U	
117-81-7-----	bis(2-Ethylhexyl)phthalate	60	
117-84-0-----	Di-n-octylphthalate	10 U	
205-99-2-----	Benzo(b)fluoranthene	10 U	
207-08-9-----	Benzo(k)fluoranthene	10 U	
50-32-8-----	Benzo(a)pyrene	10 U	
193-39-5-----	Indeno(1,2,3-cd)pyrene	10 U	
53-70-3-----	Dibenzo(a,h)anthracene	10 U	
191-24-2-----	Benzo(g,h,i)perylene	10 U	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY96

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829000

Sample wt/vol: 1000 (g/mL) mL Lab File ID: GH029000A64

Level: (low/med) LOW Date Received: 10/23/96

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 10/24/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/26/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 10 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALCOHOL	5.93	84	J
2.	UNKNOWN ALCOHOL	6.09	3	J
3. 65-85-0	BENZOIC ACID	9.10	18	NJ
4.	LABORATORY ARTIFACT	11.07	5	J
5. 121-33-5	VANILLIN	11.49	3	NJ
6.	UNKNOWN	12.58	4	J
7.	UNKNOWN CARBOXYLIC ACID	12.74	2	J
8.	UNKNOWN SUBSTITUTED PROPANOI	13.07	4	J
9.	UNKNOWN	13.86	2	J
10.	UNKNOWN	15.48	3	J
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FORM I SV-TIC

OLM03.0

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY97

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829305

Sample wt/vol: 1000 (g/mL) mL Lab File ID: GH029305C62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 10/26/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/28/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	10 U	
111-44-4	bis(2-Chloroethyl) ether	10 U	
95-57-8	2-Chlorophenol	10 U	
541-73-1	1,3-Dichlorobenzene	10 U	
106-46-7	1,4-Dichlorobenzene	10 U	
95-50-1	1,2-Dichlorobenzene	10 U	
95-48-7	2-Methylphenol	10 U	
108-60-1	2,2'-oxybis(1-Chloropropane)	10 U	
106-44-5	4-Methylphenol	10 U	
621-64-7	N-Nitroso-di-n-propylamine	10 U	
67-72-1	Hexachloroethane	10 U	
98-95-3	Nitrobenzene	10 U	
78-59-1	Isophorone	10 U	
88-75-5	2-Nitrophenol	10 U	
105-67-9	2,4-Dimethylphenol	10 U	
111-91-1	bis(2-Chloroethoxy) methane	10 U	
120-83-2	2,4-Dichlorophenol	10 U	
120-82-1	1,2,4-Trichlorobenzene	10 U	
91-20-3	Naphthalene	10 U	
106-47-8	4-Chloroaniline	10 U	
87-68-3	Hexachlorobutadiene	10 U	
59-50-7	4-Chloro-3-methylphenol	10 U	
91-57-6	2-Methylnaphthalene	10 U	
77-47-4	Hexachlorocyclopentadiene	10 U	
88-06-2	2,4,6-Trichlorophenol	10 U	
95-95-4	2,4,5-Trichlorophenol	25 U	
91-58-7	2-Chloronaphthalene	10 U	
88-74-4	2-Nitroaniline	25 U	
131-11-3	Dimethylphthalate	10 U	
208-96-8	Acenaphthylene	10 U	
606-20-2	2,6-Dinitrotoluene	10 U	
99-09-2	3-Nitroaniline	25 U	
83-32-9	Acenaphthene	10 U	

FORM I SV-1

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY97

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829305

Sample wt/vol: 1000 (g/mL) mL Lab File ID: GH029305C62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 10/26/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/28/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	Q
51-28-5-----	2,4-Dinitrophenol	25 U
100-02-7-----	4-Nitrophenol	25 U
132-64-9-----	Dibenzofuran	10 U
121-14-2-----	2,4-Dinitrotoluene	10 U
84-66-2-----	Diethylphthalate	10 U
7005-72-3-----	4-Chlorophenyl-phenylether	10 U
86-73-7-----	Fluorene	10 U
100-01-6-----	4-Nitroaniline	25 U
534-52-1-----	4,6-Dinitro-2-methylphenol	25 U
86-30-6-----	N-nitrosodiphenylamine (1)	10 U
101-55-3-----	4-Bromophenyl-phenylether	10 U
118-74-1-----	Hexachlorobenzene	10 U
87-86-5-----	Pentachlorophenol	25 U
85-01-8-----	Phenanthrene	10 U
120-12-7-----	Anthracene	10 U
86-74-8-----	Carbazole	10 U
84-74-2-----	Di-n-butylphthalate	2 J
206-44-0-----	Fluoranthene	10 U
129-00-0-----	Pyrene	10 U
85-68-7-----	Butylbenzylphthalate	10 U
91-94-1-----	3,3'-Dichlorobenzidine	10 U
56-55-3-----	Benzo(a)anthracene	10 U
218-01-9-----	Chrysene	10 U
117-81-7-----	bis(2-Ethylhexyl)phthalate	18
117-84-0-----	Di-n-octylphthalate	10 U
205-99-2-----	Benzo(b)fluoranthene	10 U
207-08-9-----	Benzo(k)fluoranthene	10 U
50-32-8-----	Benzo(a)pyrene	10 U
193-39-5-----	Indeno(1,2,3-cd)pyrene	10 U
53-70-3-----	Dibenzo(a,h)anthracene	10 U
191-24-2-----	Benzo(g,h,i)perylene	10 U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY97

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829305

Sample wt/vol: 1000 (g/mL) mL Lab File ID: GH029305C62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 10/26/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/28/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 12

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.97	6	J
2.	UNKNOWN ALCOHOL	5.58	26	J
3.	UNKNOWN KETONE	5.69	7	J
4.	UNKNOWN ALCOHOL	5.78	2	J
5.	UNKNOWN	5.84	2	J
6.	UNKNOWN	6.65	20	J
7.	METHYLMETHYLETHYLBENZENE	7.33	3	J
8.	UNKNOWN	7.92	16	J
9.	UNKNOWN	9.48	6	J
10.	UNKNOWN	10.88	4	J
11.	UNKNOWN	11.74	3	J
12.	UNKNOWN	11.80	5	J
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FORM I SV-TIC

OLM03.0

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY97RE

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829305

Sample wt/vol: 1000 (g/mL) mL Lab File ID: GJ029305C62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 10/26/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/28/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	2	J
111-44-4	bis(2-Chloroethyl) ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

FORM I SV-1

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY97RE

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004
Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95
Matrix: (soil/water) WATER Lab Sample ID: 829305
Sample wt/vol: 1000 (g/mL) mL Lab File ID: GJ029305C62
Level: (low/med) LOW Date Received: 10/25/96
% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 10/26/96
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/28/96
Injection Volume: 2.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: _____

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L Q

51-28-5-----	2,4-Dinitrophenol	25	U
100-02-7-----	4-Nitrophenol	25	U
132-64-9-----	Dibenzofuran	10	U
121-14-2-----	2,4-Dinitrotoluene	10	U
84-66-2-----	Diethylphthalate	10	U
7005-72-3-----	4-Chlorophenyl-phenylether	10	U
86-73-7-----	Fluorene	10	U
100-01-6-----	4-Nitroaniline	25	U
534-52-1-----	4,6-Dinitro-2-methylphenol	25	U
86-30-6-----	N-nitrosodiphenylamine (1)	10	U
101-55-3-----	4-Bromophenyl-phenylether	10	U
118-74-1-----	Hexachlorobenzene	10	U
87-86-5-----	Pentachlorophenol	25	U
85-01-8-----	Phenanthrene	10	U
120-12-7-----	Anthracene	10	U
86-74-8-----	Carbazole	10	U
84-74-2-----	Di-n-butylphthalate	10	U
206-44-0-----	Fluoranthene	10	U
129-00-0-----	Pyrene	10	U
85-68-7-----	Butylbenzylphthalate	10	U
91-94-1-----	3,3'-Dichlorobenzidine	10	U
56-55-3-----	Benzo (a) anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis (2-Ethylhexyl) phthalate	14	U
117-84-0-----	Di-n-octylphthalate	10	U
205-99-2-----	Benzo (b) fluoranthene	10	U
207-08-9-----	Benzo (k) fluoranthene	10	U
50-32-8-----	Benzo (a) pyrene	10	U
193-39-5-----	Indeno (1,2,3-cd) pyrene	10	U
53-70-3-----	Dibenzo (a,h) anthracene	10	U
191-24-2-----	Benzo (g,h,i) perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FEY97RE

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829305

Sample wt/vol: 1000 (g/mL) mL Lab File ID: GJ029305C62

Level: (low/med) LOW Date Received: 10/25/96

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 10/26/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/28/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.98	4	J
2.	UNKNOWN ALCOHOL	5.58	15	J
3.	UNKNOWN KETONE	5.69	3	J
4.	UNKNOWN	6.65	15	J
5.	METHYLMETHYLETHYLBENZENE	7.33	2	J
6.	UNKNOWN	9.47	5	J
7.	UNKNOWN	10.88	3	J
8.	UNKNOWN	11.74	3	J
9.	UNKNOWN	11.80	3	J
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FORM I SV-TIC

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY95

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 828988

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 10/23/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/25/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/28/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

319-84-6-----	alpha-BHC	0.050	U
319-85-7-----	beta-BHC	0.050	U
319-86-8-----	delta-BHC	0.050	U
58-89-9-----	gamma-BHC (Lindane)	0.050	U
76-44-8-----	Heptachlor	0.050	U
309-00-2-----	Aldrin	0.050	U
1024-57-3-----	Heptachlor epoxide	0.050	U
959-98-8-----	Endosulfan I	0.050	U
60-57-1-----	Dieldrin	0.10	U
72-55-9-----	4,4'-DDE	✓ 0.018	JP
72-20-8-----	Endrin	0.10	U
33213-65-9-----	Endosulfan II	0.10	U
72-54-8-----	4,4'-DDD	0.10	U
1031-07-8-----	Endosulfan sulfate	0.10	U
50-29-3-----	4,4'-DDT	0.10	U
72-43-5-----	Methoxychlor	0.50	U
53494-70-5-----	Endrin ketone	0.10	U
7421-93-4-----	Endrin aldehyde	0.10	U
5103-71-9-----	alpha-Chlordane	0.050	U
5103-74-2-----	gamma-Chlordane	0.0032	JP
8001-35-2-----	Toxaphene	5.0	U
12674-11-2-----	Aroclor-1016	1.0	U
11104-28-2-----	Aroclor-1221	2.0	U
11141-16-5-----	Aroclor-1232	1.0	U
53469-21-9-----	Aroclor-1242	1.0	U
12672-29-6-----	Aroclor-1248	1.0	U
11097-69-1-----	Aroclor-1254	1.0	U
11096-82-5-----	Aroclor-1260	1.0	U

FORM I PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY96

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829000

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 10/23/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/25/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/29/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM I PEST

OLM03.0

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FEY97

Lab Name: COMPUCHEM ENV. CORP. Contract: 68D50004

Lab Code: COMPU Case No.: 25093 SAS No.: SDG No.: FEY95

Matrix: (soil/water) WATER Lab Sample ID: 829305

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 10/25/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/28/96

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/29/96

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM I PEST

OLM03.0

481



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

To: DeAnna Epperson , TNRCC
Thru: Melvin Ritter, Region 6 RPO *M. Ritter*
From: Marvelyn Humphrey, Alt. RPO *M. Humphrey*
Subject: Correction of Data Summary Table for BNA sample FEZ01, Case / SDG- 25093
FEY80
Date : January 7, 1997

Attached is the correction of the data summary table for the analytical results of BNA sample FEZ01, Case 25093, SDG FEY80. If you have any additional questions, I may be reached at (281) 983 - 2140.



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MEMORANDUM

To: Dr. Melvin Ritter, ESAT RPO
From: Dr. Tom C. H. Chiang, ESAT TM *Tom Chiang 01 02*
Subject: Correction of Data Summary Table for Case/SDG
25093/FEY80
Date: January 6, 1997
Ref: MEM1489
Copies: File
M. Humphrey

The original data summary table for Case/SDG 25093/FEY80 contained several data qualifier errors for BNA sample FE-Z01. Several positive results were inadvertently flagged with the "U" qualifier, and bias flags were omitted for two results. Attached are replacement pages with the proper corrections. Please forward these pages to the project user B. Canellas (6SF-RA) and TNRCC. These pages should replace the corresponding ones in the original data review report. ESAT has initiated corrective actions to prevent the recurrence of such oversight.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY90

Reviewer: W. DCCNG

Laboratory: CCMPU

Matrix: SOIL

Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y92	FE-Y93	FE-Y93RE	FE-Y94	FE-Z01	FE-Z02	FE-Z03
Phenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
bis(2-Chloroethyl) ether	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2-Chlorophenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
1,3-Dichlorobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
1,4-Dichlorobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
1,2-Dichlorobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2-Methylphenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,2'-Oxybis(1-chloropropane)	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
4-Methylphenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
N-Nitroso-di-n-propylamine	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Hexachloroethane	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Nitrobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Isophorone	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2-Nitrophenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,4-Dimethylphenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
bis(2-Chloroethoxy) methane	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,4-Dichlorophenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
1,2,4-Trichlorobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Naphthalene	780 U	580 U*	580 U	480 U	6700	550 U	570 U
4-Chloroaniline	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Hexachlorobutadiene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
4-Chloro-3-methylphenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2-Methylnaphthalene	780 U	580 U*	580 U	480 U	8000	550 U	570 U
Hexachlorocyclopentadiene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,4,6-Trichlorophenol	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,4,5-Trichlorophenol	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
2-Chloronaphthalene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2-Nitroaniline	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
Dimethylphthalate	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Acenaphthylene	780 U	580 U*	580 U	480 U	7300	32 U	98 U
2,6-Dinitrotoluene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
3-Nitroaniline	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
Acenaphthene	780 U	580 U*	580 U	480 U	8800	550 U	570 U
2,4-Dinitrophenol	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
4-Nitrophenol	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
Dibenzofuran	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
2,4-Dinitrotoluene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Diethylphthalate	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
4-Chlorophenyl-phenylether	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Fluorene	780 U	580 U*	580 U	480 U	9200	550 U	570 U
4-Nitroaniline	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
4,6-Dinitro-2-methylphenol	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
N-Nitrosodiphenylamine	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
4-Bromophenyl-phenylether	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Hexachlorobenzene	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Pentachlorophenol	2000 U	1400 U*	1400 U	1200 U	7300 U	1400 U	1400 U
Phenanthrene	780 U	580 U*	580 U	480 U	21000	550 U	570 U
Anthracene	780 U	580 U*	580 U	480 U	5000	550 U	570 U

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y85	FE-Y86	FE-Y87	FE-Y88	FE-Y89	FE-Y90	FE-Y91
Carbazole	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Di-n-butylphthalate	780 U	630 U	910 U	140 J	510 U	480 U	130 J
Fluoranthene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Pyrene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Butylbenzylphthalate	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
3,3'-Dichlorobenzidine	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Benzo(a)anthracene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Chrysene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
bis(2-Ethylhexyl)phthalate	780 U	630 U	120 J	1100 U	510 U	72 J	60 J
Di-n-octylphthalate	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Benzo(b)fluoranthene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Benzo(k)fluoranthene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Benzo(a)pyrene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Indeno(1,2,3-cd)pyrene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Dibenz(a,h)anthracene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Benzo(g,h,i)perylene	780 U	630 U	910 U	1100 U	510 U	480 U	530 U
Sample wt (g):	30.2	30.2	30.2	30.4	30.4	30.2	30.2
%Moisture:	58	48	64	71	36	12	38
Dilution Factor:	1	1	1	1	1	1	1
Level:	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Number of TIC's:	2	4	5	14	16	6	13

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. COCNG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

SEMIVOLATILES	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y92	FE-Y93	FE-Y93RE	FE-Y94	FE-Z01	FE-Z02	FE-Z03
Carbazole	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Di-n-butylphthalate	780 U	580 U*	580 U	480 U	2900 U	120 J	58 J
Fluoranthene	37 J	61 *	580 U	480 U	9500	550 U	570 U
Pyrene	60 J	170 *	94 J	480 U	11000	550 U	570 U
Butylbenzylphthalate	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
3,3'-Dichlorobenzidine	780 U	580 U*	580 U	480 U	2900 U	550 U	570 U
Benzo(a)anthracene	780 U	580 U*	580 U	480 U	4200	550 U	570 U
Chrysene	780 U	580 U*	81 J	480 U	4900	550 U	570 U
bis(2-Ethylhexyl)phthalate	780 U	580 U*	80 J	60 J	400 J	220 J	100 J
Di-n-octylphthalate	780 U	580 U*	580 UJv	480 U	2900 U	550 U	570 U
Benzo(b)fluoranthene	780 U	130 *	72 J	480 U	4200 J*	550 U	570 U
Benzo(k)fluoranthene	780 U	140 *	65 J	480 U	4700 J*	550 U	570 U
Benzo(a)pyrene	780 U	580 U*	580 UJv	480 U	3300	550 U	570 U
Indeno(1,2,3-cd)pyrene	780 U	580 U*	580 UJv	480 U	720 J	550 U	570 U
Dibenz(a,h)anthracene	780 U	580 U*	580 UJv	480 U	2900 U	550 U	570 U
Benzo(g,h,i)perylene	780 U	580 U*	580 UJv	480 U	580 J	550 U	570 U
Sample wt (g):	30.2	30.1	30.2	30.0	30.3	30.1	30.1
%Moisture:	58	43	43	31	55	40	42
Dilution Factor:	1	1	1	1	4	1	1
Level:	LOW	LOW	LOW	LOW	LOW	LOW	LOW
Number of TIC's:	32	20	30	8	30	14	11

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

ORGANIC DATA SUMMARY

Case No.: 25093

SDG: FEY80

Reviewer: W. DOONG

Laboratory: COMPU

Matrix: SOIL

Units: ug/Kg

PESTICIDES/PCBs	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG	FLAG
EPA SAMPLE NUMBER:	FE-Y77	FE-Y80	FE-Y81	FE-Y82	FE-Y83	FE-Y84	FE-Y85
alpha-BHC	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	2.9 J	4.0 U
beta-BHC	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	5.2 U	4.0 U
delta-BHC	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	2.6 J	4.0 U
gamma-BHC (lindane)	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	0.67 J	4.0 U
Heptachlor	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	5.2 U	4.0 U
Aldrin	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	2.4 J	4.0 U
Heptachlor epoxide	4.7 U	3.4 U	3.2 U	3.4 U	0.91 J	5.2 U	4.0 U
Endosulfan I	4.7 U	3.4 U	3.2 U	3.4 U	4.6 U	5.2 U	4.0 U
Dieldrin	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
4,4'-DDE	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
Endrin	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
Endosulfan II	9.2 U	6.6 U	6.3 U	6.6 U	1.1 J	10 U	7.8 U
4,4'-DDD	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
Endosulfan sulfate	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
4,4'-DDT	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	20 J	7.8 U
Methoxychlor	47 U	34 U	32 U	34 U	46 U	52 U	40 U
Endrin ketone	9.2 U	6.6 U	6.3 U	6.6 U	8.9 U	18 NJ	7.8 U
Endrin aldehyde	4.0 J	6.6 U	6.3 U	6.6 U	8.9 U	10 U	7.8 U
alpha-Chlordane	2.8 J	3.4 U	3.2 U	3.4 U	4.6 U	5.2 U	4.0 U
gamma-Chlordane	4.3 J	3.4 U	3.2 U	3.4 U	1.4 J	5.2 U	4.0 U
Toxaphene	470 U	340 U	320 U	340 U	460 U	520 U	400 U
Aroclor-1016	92 U	66 U	63 U	66 U	89 U	100 U	78 U
Aroclor-1221	190 U	130 U	130 U	130 U	180 U	200 U	160 U
Aroclor-1232	92 U	66 U	63 U	66 U	89 U	100 U	78 U
Aroclor-1242	92 U	66 U	63 U	66 U	89 U	100 U	78 U
Aroclor-1248	92 U	66 U	63 U	66 U	89 U	100 U	78 U
Aroclor-1254	130 J	66 U	63 U	66 U	89 U	100 U	78 U
Aroclor-1260	92 U	66 U	63 U	66 U	89 U	100 U	78 U
Sample wt (g):	30.0	30.1	30.2	30.0	30.0	30.0	30.0
%Moisture:	64	50	48	50	63	67	58
Dilution Factor:	1	1	1	1	1	1	1

Note: For the results listed in the Data Summary Table, ESAT has replaced the laboratory assigned flags with ESAT Organic Data Qualifiers. The ESAT flags indicate the technical usability of the reported results.

APPENDIX D

CONFIDENTIAL

TEXAS WATER QUALITY BOARD
P.O. Box 13246, Capitol Station
Austin, Texas 78711

ENFORCEMENT ORDER NO. 76-26

AN ENFORCEMENT ORDER of the Texas Water Quality Board setting out findings of fact and conclusions of law with regard to violations of Permit No. 01857 by Riverside Chemical Company and specifying corrective measures to be taken by the company.

WHEREAS, a public Enforcement Hearing was held before a Hearing Commission of the Texas Water Quality Board on February 11, 1976 at Beaumont, Texas for the purpose of exploring the status of compliance by Riverside Chemical Company with the terms and provisions of Permit No. 01857; and

WHEREAS, Riverside Chemical Company was duly represented at the Enforcement Hearing of which notice had been given through letter and publication;

THE TEXAS WATER QUALITY BOARD MAKES THE FOLLOWING FINDINGS OF FACT BASED ON INFORMATION AND TESTIMONY PRESENTED AT THE ENFORCEMENT HEARING:

1. Riverside Chemical Company owns and operates a toxaphene and chlorinated paraffin manufacturing plant located at the intersection of FM Road 366 and Hogaboom Road in Port Neches, Jefferson County, Texas. The company is authorized by Permit No. 01857 to discharge industrial wastes into the Jefferson County Canal and thence into the Neches River.
2. The company has not provided a flow measuring device at Outfall 001. The self reporting instructions adopted pursuant to Board Order No. 69-1219-1 require that measurements of flow be taken at certain intervals. Accurate reporting of flow is not possible without a flow measuring device.
3. The company has failed to collect samples of the final effluent at the monitoring point specified in the permit. Permit No. 01857, Part A. states that samples taken in compliance with specified monitoring requirements shall be taken at Outfall 001, the point of discharge of plant effluent into the Jefferson County Canal.
4. The company has failed to collect the required number of

ATTACHMENT I

ENFORCEMENT ORDER

NO. 76-26

weekly composite samples for toxaphene and chlorinated hydrocarbon concentrations in its final effluent. Permit No. 01857, Part A. requires that two (2) 24-hour composite samples of toxaphene and chlorinated hydrocarbons be taken each week.

5. On many occasions since May 22, 1974, the company has discharged effluent in excess of 0.5 milligrams per liter (mg/l) toxaphene, 70 mg/l suspended solids, 3500 mg/l total dissolved solids, 20 mg/l oil and grease, 70 mg/l biochemical oxygen demand (BOD), and 6.0-9.0 standard units pH. The Other Requirements section of Permit No. 01857 specifies grab sample limits for the following quality parameters: 0.5 mg/l toxaphene, 70 mg/l suspended solids, 3500 mg/l total dissolved solids, 20 mg/l oil and grease, and 70 mg/l BOD. Part A of Permit No. 01857 specifies a pH of 6.0-9.0 standard units.
6. The company has not provided the treatment facilities necessary to meet the effluent requirements of Permit No. 01857.
7. Partially treated domestic sewage is periodically discharged from a septic tank system on the company's property into a public drainage ditch. This discharge is not authorized by a permit or other order of the Texas Water Quality Board.
8. The company has not taken adequate measures to prevent the occurrence of spills of hazardous materials on the plant property. The spill areas, if not segregated from the uncontaminated areas and controlled, pose a threat of pollution to the waters of the state.
9. Notice of the Enforcement Hearing at which alleged violations of Permit No. 01857 by Riverside Chemical Company were considered was mailed on January 13, 1976 and published in a newspaper of local circulation on January 22, 1976. The Enforcement Hearing was held on February 11, 1976.

THE TEXAS WATER QUALITY BOARD MAKES THE FOLLOWING CONCLUSIONS OF LAW BASED ON THE FOREGOING FINDINGS OF FACT AND IN ACCORDANCE WITH THE REQUIREMENTS AND POLICIES OF CHAPTER 21 OF THE TEXAS WATER CODE:

ENFORCEMENT ORDER

NO. 76-26

1. Failure by the company to provide a flow measuring device at Outfall 001 is a violation of Board Order No. 69-1219-1 and the instructions adopted thereto. Violation of a Board order contravenes Section 21.251(c) of the Texas Water Code which prohibits the discharge of any waste or the performance of any activity in violation of any permit or order of the Texas Water Quality Board.
2. Failure by the company to collect samples of the final effluent at the monitoring point specified in Part A. of Permit No. 01857 violates that permit provision and also violates Section 21.251(c) of the Texas Water Code.
3. Failure by the company to collect the required number of composite samples for toxaphene and chlorinated hydrocarbons as specified in Part A. of Permit No. 01857 contravenes that permit provision and also contravenes Section 21.251(c) of the Texas Water Code.
4. The discharge by the company of effluent containing concentrations of toxaphene, suspended solids, total dissolved solids, oil and grease and BOD in excess of grab sample limits specified by Permit No. 01857 violates those permit specifications and also violates Section 21.251(c) of the Texas Water Code.
5. The unauthorized discharge of partially treated sewage from a septic tank system on the company's premises contravenes Section 21.251(a) of the Texas Water Code which states that except as authorized by a permit or other order of the Texas Water Quality Board, no person may discharge sewage into or adjacent to any water in the state.
6. Violations of Permit No. 01857 by Riverside Chemical Company and related matters were considered at an Enforcement Hearing held in accordance with the Texas Water Quality Board's Rules of Practice and Procedure and the Texas Water Code.
Now, therefore,

BE IT ORDERED BY THE TEXAS WATER QUALITY BOARD THAT:

ENFORCEMENT ORDER

NO. 76-26

1. Effective immediately, Riverside Chemical Company shall comply with the reporting, monitoring and sampling requirements of Permit No. 01857 and Board Order No. 69-1219-1.
2. By not later than July 1, 1976, Riverside Chemical Company shall install on Outfall 001 a permanent flow measuring device.
3. By not later than July 1, 1976, Riverside Chemical Company shall submit to the Executive Director of the Texas Water Quality Board a spill prevention control and countermeasure plan prepared by a registered professional engineer experienced in industrial wastewater control technology.
4. By not later than July 1, 1976, Riverside Chemical Company shall submit to the Executive Director of the Texas Water Quality Board for approval a plan prepared by a registered professional engineer to eliminate any storm water discharges from its property contaminated with detectable amounts of toxaphene, pentachlorophenol or any chlorinated hydrocarbon. All such storm water discharges shall be eliminated within 90 days of approval of the plan. In addition, the company shall by not later than July 1, 1977, reduce concentrations of oil and grease and total organic carbon in contaminated storm water to not more than 15 mg/l and 35 mg/l, respectively.
5. By not later than July 1, 1976, Riverside Chemical Company shall eliminate the discharge of inadequately treated domestic sewage from a septic tank system located on the company's property.
6. By not later than December 1, 1976, Riverside Chemical Company shall submit to the Executive Director of the Texas Water Quality Board for approval plans and specifications prepared by a registered professional engineer to limit discharges of toxaphene to 0.01 mg/l for any single grab sample; upon submission of the plans and specifications, Riverside Chemical Company shall also submit an application to amend Permit No. 01857 to reflect the modifications that are necessary to limit the discharge of toxaphene.

ENFORCEMENT ORDER

NO. 76-26

7. By not later than July 1, 1977, Riverside Chemical Company shall complete all construction necessary to meet the conditions of the permit and/or an appropriately amended permit.

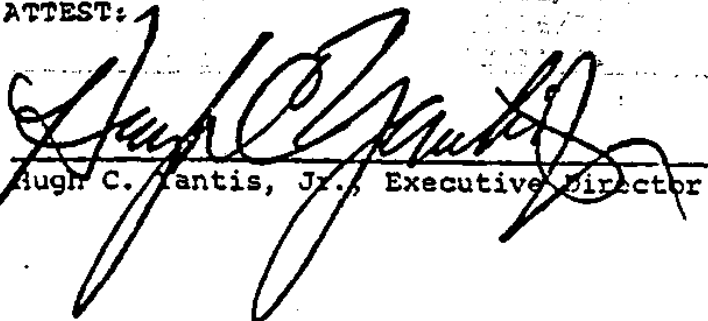
APPROVED AND ISSUED THIS, THE 27TH DAY OF MAY, 1976.

TEXAS WATER QUALITY BOARD


J. Douglass Poole, Chairman

(Seal)

ATTEST:


Hugh C. Tantis, Jr., Executive Director

RIVERSIDE CHEMICAL COMPANY
TOXAPHENE SAMPLES

DATE	SAMPLE CONCENTRATION	GRAB SAMPLE REQUIREMENT
10/29/75	.76 mg/l	.5 mg/l
5/07/75	.54 mg/l	.5 mg/l
4/17/75	1.4 mg/l	.5 mg/l
4/11/75	1.7 mg/l	.5 mg/l
4/03/75	2.8 mg/l	.5 mg/l
3/27/75	1.4 mg/l	.5 mg/l
3/20/75	1.9 mg/l	.5 mg/l
3/14/75	1.1 mg/l	.5 mg/l
2/19/75	.86 mg/l	.5 mg/l
2/12/75	.95 mg/l	.5 mg/l
2/07/75	2.05 mg/l	.5 mg/l
1/30/75	2.14 mg/l	.5 mg/l
1/22/75	5.9 mg/l	.5 mg/l
1/10/75	1.25 mg/l	.5 mg/l
1/17/75	1.27 mg/l	.5 mg/l
12/31/74	1.6 mg/l	.5 mg/l
12/26/74	16.2 mg/l	.5 mg/l
12/11/74	9.2 mg/l	.5 mg/l

TABLE II
RIVERSIDE CHEMICAL COMPANY
SUSPENDED SOLIDS SAMPLES

DATE	SAMPLE CONCENTRATION	GRAB SAMPLE REQUIREMENT
4/23/75	186 mg/l	70 mg/l
3/27/75	75 mg/l	70 mg/l
3/17/75	156 mg/l	70 mg/l
2/28/75	259 mg/l	70 mg/l
2/12/75	234 mg/l	70 mg/l
1/22/75	314 mg/l	70 mg/l
1/14/75	262 mg/l	70 mg/l
12/26/74	900 mg/l	70 mg/l
11/27/74	108 mg/l	70 mg/l
10/23/74	268 mg/l	70 mg/l
9/25/74	206 mg/l	70 mg/l
9/11/74	529 mg/l	70 mg/l
3/27/75	75 mg/l	70 mg/l
2/12/75	234 mg/l	70 mg/l
1/22/75	260 mg/l	70 mg/l
9/25/74	206 mg/l	70 mg/l
8/08/74	81 mg/l	70 mg/l
7/26/74	82 mg/l	70 mg/l
5/01/74	152 mg/l	70 mg/l

TOTAL DISSOLVED SOLIDS SAMPLES

DATE	SAMPLE CONCENTRATION	GRAB SAMPLE REQUIREMENT
7/25/75	15,927 mg/l	3500 mg/l
7/23/75	4,163 mg/l	3500 mg/l
7/21/75	26,310 mg/l	3500 mg/l
9/12/74	6,720 mg/l	3500 mg/l
9/11/74	16,800 mg/l	3500 mg/l
9/06/74	18,400 mg/l	3500 mg/l
9/05/74	25,800 mg/l	3500 mg/l

TABLE IV
RIVERSIDE CHEMICAL COMPANY
OIL AND GREASE SAMPLES

DATE	SAMPLE CONCENTRATION	GRAB SAMPLE REQUIREMENTS
12/03/75	21 mg/l	20 mg/l
11/07/75	108 mg/l	20 mg/l
11/06/75	25 mg/l	20 mg/l
10/01/75	86 mg/l	20 mg/l
9/24/75	260 mg/l	20 mg/l
9/12/75	114 mg/l	20 mg/l
8/20/75	27 mg/l	20 mg/l
2/12/75	106 mg/l	20 mg/l
1/22/75	230 mg/l	20 mg/l
1/14/75	40 mg/l	20 mg/l
12/26/74	75 mg/l	20 mg/l

TABLE V
RIVERSIDE CHEMICAL COMPANY
BIOCHEMICAL OXYGEN DEMAND SAMPLES

DATE	SAMPLE CONCENTRATION	GRAB SAMPLE REQUIREMENT
10/29/75	2,052 mg/l	70 mg/l
10/22/75	2,000 mg/l	70 mg/l
10/03/75	1,150 mg/l	70 mg/l
10/01/75	83 mg/l	70 mg/l
7/15/75	185 mg/l	70 mg/l
1/22/75	260 mg/l	70 mg/l
7/26/74	240 mg/l	70 mg/l

TABLE VI
RIVERSIDE CHEMICAL COMPANY
pH SAMPLES

DATE	SAMPLE CONCENTRATION	EFFLUENT LIMITATION
12/05/75	10.0	6.0-9.0
12/03/75	10.96	6.0-9.0
11/14/75	10.8	6.0-9.0
11/12/75	11.6	6.0-9.0
11/11/75	10.9	6.0-9.0
10/31/75	11.5	6.0-9.0
10/29/75	12.73	6.0-9.0
9/24/75	9.99	6.0-9.0
9/12/75	10.43	6.0-9.0
8/27/75	4.94	6.0-9.0
8/20/75	9.55	6.0-9.0
5/7/75	10.64	6.0-9.0
4/23/75	13.2	6.0-9.0
3/27/75	10.0	6.0-9.0
11/27/74	10.5	6.0-9.0
11/13/74	13.3	6.0-9.0
10/23/74	10.5	6.0-9.0
9/25/74	9.8	6.0-9.0
9/11/74	13.6	6.0-9.0
4/26/74	1.4	6.0-9.0

8/9/79

Texas Department of Water Resources

INTEROFFICE MEMORANDUM

TO : Steve Cook, Investigation Unit,
Enforcement Support Section

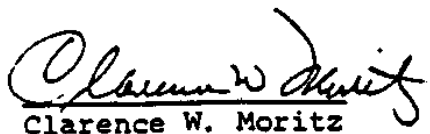
THRU :

DATE: August 13, 1979

FROM : Clarence W. Moritz, District 6 Supervisor

SUBJECT: Enforcement Action: Sonford Chemical Company, Permit
Application Control No. 342; H & R Chemical, No Permit;
Bison Chemical Company, Permit Application Control No. 2564;
Riverside Chemical Company, Permit No. 01857 and Solid
Waste Registration No. 30446; and/or Chemall, Inc., Permit
No. 01857

Attached is an Enforcement Report concerning Sonford
Chemical Company, H & R Chemical, Bison Chemical Company,
Riverside Chemical Company, and/or Chemall, Inc. with the
subject permit status. In preparing and/or reviewing
this report, I find that it is accurate and that the
proposed recommendations will bring about the correction
of those problems which are causing or have caused the
violations. Please review this matter for appropriate
enforcement action.


Clarence W. Moritz

See Attachment

INVESTIGATION REPORT

Sonford Chemical Company; H & R Chemical;
Bison Chemical Company; Riverside
Chemical Company and Chemall, Inc.

Sonford Chemical Company, Permit Application Control No. 342;
H & R Chemical, no permit, operating for Sonford Chemical Co.;
Bison Chemical Company, Permit Application Control No. 2564;
Riverside Chemical Company, Permit No. 01857 and Solid Waste
Registration No. 30446 and Chemall, Inc., Permit No. 01857.

Chemical Plant of the subject companies is located at the intersection of FM 366 (Pure Atlantic Highway) and Hogaboom Road in Port Neches, Jefferson County, Texas. Area of concern in this investigation is the Jefferson Chemical Outfall Canal and land owned by Jefferson Chemical - leased to Union Carbide, both of which have been found to be contaminated with high concentrations of toxaphene discharged or improperly disposed of in the area. The adjacent Union Carbide land is in Groves, Jefferson County, Texas with the outfall ditch apparently forming the boundary line between Groves and Port Neches.

I. Introduction (by sequential ownership)

A. Identification

1. Sonford Chemical (in operation prior to October 31, 1967 to October 3, 1972):

No treatment system - drains, ditch, sump, and tile pipe to Jefferson Chemical Outfall Ditch

Permit applications pending, Control No. 342 submitted on October 23, 1968, June 30, 1969 and November 20, 1970. Permit application was extended to amend and meet "excellent treatment" requirements by September 30, 1973. Owner filed bankruptcy petition on June 2, 1972. Permit was never issued.

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2. H & R Chemical (packaged inventory, only with no discharge, for Sonford Chemical Company from July 5, 1972 to last week in August 1972):

No treatment system

No permit (apparently operated under provisions of Chapter 11 of Bankruptcy Act or under orders of the court)

3. Bison Chemical Company (owned plant from October 3, 1972 to February 5, 1974):

No treatment system

Permit Application Control No. 2564, submitted application on November 18, 1973

4. Riverside Chemical Company (owned plant from February 5, 1974 to February 17, 1978):

No treatment system initially. Neutralization of discharge by caustic scrubbers apparently took place after April 26, 1974. On November 8, 1975 all wastewater except boiler blowdown and cooling water were routed to a 600,000 gallon holding pond. On March 2, 1976 the boiler blowdown was routed to the pond. Discharges from the pond were routed to a pit where they joined the cooling water prior to discharge through a clay tile pipe to the outfall ditch. On March 19, 1976 a pit system used for monitoring was sealed, the cooling water recycled and the pond used for holding and evaporation.

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The pond was formerly used as a waste slop pit for toxaphene, pentachlorophenol, chlorinated hydrocarbons and calcium chloride wastes.

Permit pending February 5, 1974 to May 22, 1974. Permit No. 01857, May 22, 1974. Permit No. 01857 amended August 31, 1977 and transferred to Chemall, Inc., pending transfer of title, which was finally closed on February 17, 1978. Solid Waste Registration No. 30466, April 12, 1976.

5. Chemall, Inc. (owned plant from February 17, 1978 to date):

No treatment - same as Riverside (recent inspection report to follow).

Permit No. 1857, amended August 31, 1977 and transferred from Riverside Chemical Company to Chemall, Inc., pending transfer of title, which was finally closed February 17, 1978. Note: Letter DW/HCY, Jr./Robert C. Harnden, Riverside Chemical Company on August 2, 1977 relative to holding and evaporation pond (still contaminated) holding both Riverside Chemical and Chemall, Inc. jointly liable for any discharge from pond (pit). Chemall has had no apparent discharge.

B. Current Discharge Parameters (average):

1. Sonford Chemical Company proposed monthly average. Excellent treatment requirements of October 8, 1970 (equivalent to Permit Application Control No. 342):

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pH	5.5 - 8.5
Total Residue, mg/l	10,000
Chloride, mg/l	5,000
Sulphate, mg/l	1,000
Total Suspended Solids, mg/l	30
Volatile Suspended Solids, mg/l	10
Settleable Matter, mg/l	5
Immediate Oxygen Demand, mg/l	0.5
Biochemical Oxygen Demand	25
Chemical Oxygen Demand	250
Oil and Grease, mg/l	2
Free and Floating Oil	None
Color APHA Units	20
Temperature °F	90
Debris	None
Phenol, mg/l	5
Flow, mgd	0.580

Toxic Compounds - None in such amounts that will cause the receiving waters to be toxic to human, animal, or aquatic life.

Foaming or Frothing Material - None in such amounts that will cause foaming or frothing of a persistent nature in the receiving waters.

2. H & R Chemical - packaging of inventory only
3. Bison Chemical Company - submitted application November 18, 1973. Processed under Riverside Chemical Company ownership on May 22, 1974.
4. Riverside Chemical Company, Permit No. 01857 dated May 22, 1974

Flow, mgd, not to exceed	.045
Biochemical Oxygen Demand (5 day), lbs/day	10.0
Chemical Oxygen Demand, lbs/day	60.0
Total Suspended Solids, lbs/day	10.0
Oil & Grease, lbs/day	5.0
Toxaphene, lbs/day	0.04
Chlorinated Hydrocarbons as C Cl ₄ , mg/l	3.0 max/day
pH	6 - 9

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Solid Waste Registration No. 30406 dated April 12, 1976 - General plant trash & rubble (Class II) off-site - Camphene and waxes (Class I) off-site - Toxaphene (Class I) off-site

Riverside Chemical Company, Permit No. 01857 dated August 31, 1977, as amended (to transfer of title, effective February 17, 1978):

Flow (see Special Provisions below)

Biochemical Oxygen Demand (5 day), lbs/day	10.0
Chemical Oxygen Demand, lbs/day	60.0
Total Suspended Solids, lbs/day	10.0
Oil & Grease, lbs/day	5.0
Toxaphene, lbs/day	0.0007
Chlorinated Hydrocarbons (as C Cl4) max/day	3.0 mg/l
pH	6.0 - 9.

5. Chemall, Inc., Permit No. 01857 dated August 31, 1977, as amended (transferred title effective February 17, 1978). Parameters same as Riverside as of August 31, 1977.

C. Special Provisions of Permit:

1. Sonford Chemical Company - No permit
2. H & R Chemical - No permit (operating under Bankruptcy Act)
3. Riverside Chemical Company, Permit No. 01857 dated May 22, 1974 (permit pending February 5, 1974 to May 22, 1974):

Standard provisions for effluent limitations and monitoring requirements including point of discharge; monitoring and reporting pursuant to Board Order No. 69-1219-1; management requirements including change in discharge, non-compliance notification, facilities operation, adverse impact, bypassing, power failures and removed substances.

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Removed substances specified that solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the waters of the State of Texas.

Standard provisions also included responsibilities including right of entry, transfer of ownership or control, availability of reports, permit modifications, toxic pollutants, civil and criminal liability, oil and hazardous substance liability, state and federal laws, property rights, and severability of conditions.

No special provisions were included in Part III, Other Requirements of the May 22, 1974 permit.

Solid Waste Registration No. 30446 dated April 12, 1976 included standard provisions for shipping-control tickets and monthly reporting for off-site disposal of Class I wastes.

Riverside Chemical Co., Permit No. 01857, amended August 31, 1977. Part III, Other Requirements.

All storm water which falls within the boundaries of the plant site shall be considered to be contaminated and will be given full treatment in the treatment plant prior to discharge should samples indicate that the quality of water exceeds these limits:

<u>Parameter (mg/l)</u>	<u>Grab Sample (not to exce</u>
Total Organic Carbon	70
Oil & Grease	15
Toxaphene	0.01
Total Chlorinated Hydrocarbons	0.5

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The treatment technology considered to be the minimum necessary to properly treat the waste-waters which are authorized to be discharged by this permit during any period of plant production is considered to be neutralization, API separation, equalization, filtration, carbon adsorption, or ion exchange, or reductive degradation, and only additional treatment or pre-treatment necessary to stabilize biodegradable organic material to within the limits specified by this permit.

An alternative treatment system may be used with prior approval from the Executive Director. No discharge of pollutants to the waters in the State is authorized by this permit unless the pollutant has received treatment in a facility which includes the processes specified above or an approved alternate. This provision applies only to process water and contaminated storm water.

The permittee shall, within 180 days following the approval of this permit, install a permanent flow measuring device equipped to totalize and record measured volume for all discharges from the outfall.

All samples which are taken to characterize the chemical quality of the effluent to be discharged shall be analyzed according to the Environmental Protection Agency method specified in 40 CFR, Part 136. An alternate method of analyses may be used with prior approval of the Executive Director.

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II. Waste Load

A. Source:

1. Sonford Chemical Company: Chemical plant producing pentachlorophenol, toxaphene, chlorinated waxes, and calcium chloride, with once through (well) cooling water, steam condensate, caustic scrubbing (sodium hydroxide), boiler blowdown, brine, glycol solvent and with muratic (hydrochloric) acid as a by-product. Discharge was subject to spills, wash down, pipe and valve leaks, and rainfall runoff. Pilot plant operations at plant was unknown; however, as outlined in a later SPCCP (Riverside Chemical Company) warehouse storage included 2, 4, 5-T; 2, 4D, malathion, dinitrophenol, captan, carbaryl, chlorodane, dalapon, diazinon, dimethylamine, diquat, diuron, ethion, guthion, methylparathion, and parathion in addition to toxaphene.
2. H & R Chemical - Packaging inventory for Sonford Chemical Company
3. Bison Chemical Company - Same as Sonford Chemical Company except pentachlorophenol was not being produced, but was in inventory.
4. Riverside Chemical Company: Produced toxaphene, chlorinated waxes, and hydrochloric acid until February 25, 1976 when toxaphene production was discontinued. Inventory of pentachlorophenol was removed following purchase of plant on February 5, 1974. Removal date of toxaphene inventory is unknown; although, in an engineering report (TCB, August 1977) a small inventory was still on hand along with drums containing acetone, spon resin, and diesel oil. Warehouse storage of insecticides status was the same as listed in the SPCCP of June 1976 and in

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August 1977 methylparathion, 2, 4D, and 2, 4, 5T were on hand. Status of others was unknown. Have had no process discharges since March 1973; however, storm water runoff contaminated with high concentrations of toxaphene was observed on July 21, 1977 and August 5, 1977.

Samples taken in the facultative holding pond on September 30, 1976 and November 2, 1976, recorded on Chain of Custody Tags IN3753 and IN3789, indicated brown sludge concentrations of 7,400 and 20,000 mg/kg of toxaphene, respectively and in the water of 17.5 and 2.0 mg/l of toxaphene, respectively. Samples of sediment from wet well on January 29, 1976 (IN2620) revealed a toxaphene concentration of 3,916 mg/kg and a pentachlorophenol concentration of 87.7 mg/kg. On July 21, 1977 the pond waters contained 78 mg/l toxaphene and 69.0 mg/l pentachlorophenol.

5. Chemall, Inc.: Produced parafins and chlorinated waxes and oils for the linoleum industry with muratic (hydrochloric) acid as a by-product. Holding and evaporation pond still contained toxaphene sludges on August 5, 1977; however, the company has made no discharges of wastewaters and have no toxaphene in inventory. A recent inspection report is in progress.

B. Quantity and Quality of Waste from each Source:

1. Sonford Chemical Co.: Boiler blowdown (1%), domestic sewage (septic tank to inadequate drain field), cooling water (94%), process water (0.0%), intermittant wash up water (5.0%) - unit clean-up, small product spills, ruptured pipeline and flanges, and rainfall runoff.

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Flow	0.06 - 0.55 mgd
pH	0.9 - 11.0 (neutralizing with brine)
Phenols	0.4 - 68 mg/l
Cond.	1808 - 81,144 umhos/cm
TSS	<10 - 652 mg/l
VSS	6 - 90 mg/l
BOD	24 - 230 mg/l
DO	0.8 - 7.5 mg/l
COD	113 - 4330 mg/l (interference)
Chlorides	13,300
Oil & Grease	7.8 mg/l

Production rates: Pentachlorophenol - 10,000 pounds/yr (2/18/70)
Planned expansion to 18,000,000 pounds/yr (5/70)
Leading producer of toxaphene

2. H & R Chemical: Packaging inventory for Sonford Chemical while under bankruptcy investigation.
3. Bison Chemical Co.: Same as Sonford Chemical Co. except pentachlorophenol was discontinued.

Flow	0.37 mgd
pH	2.0
Cond.	34,944 umhos/cm
TSS	2,800 mg/l
BOD	25 mg/l
COD	<0.2 mg/l
Phenols	<0.05 mg/l
Oil & Grease	1.6 mg/l

On January 23, 1973 a contractor from Denver, Colorado was in process of removing approximately 100,000 pounds of off-grade toxaphene and pentachlorophenol left by Sonford and shipping it to Colorado. Planned to tear down pentachlorophenol unit, old toxaphene unit, and build a new toxaphene unit.

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On October 2, 1973 attempting tear down and to rebuild old corroding plants with considerable progress. Still had 158 drums and some partially filled tanks on hand, utilizing Class I sites.

On October 24, 1973 indicated they had gotten rid of 40 drums of PCP but still had 400 more belonging to Dr. Hatcher of Sonford.

4. Riverside Chemical Company: Producing 5-6,000,000 pounds per year of toxaphene, 2,000,000 pounds per year of chlorinated paraffins, and 12,000,000 pounds per year of muriatic (hydrochloric) acid. Estimated 1 ppm or less of toxaphene, 1 ppm or less chlorinated paraffins and 5-10 ppm or less hydrochloric acid in waste. Survey of August 6, 1974 (BM, 11/6/74) gives breakdown of boiler blowdown, storm water runoff, cooling water, acid tank wash, caustic scrubber and final plant effluent. Chlorides 5100 mg/l, TSS 256 mg/l, and pH 10.0 were in violation of Permit No. 01857. Toxaphene was 5.25 mg/l in storm water runoff.

From April 26, 1974 to December 5, 1975 pollutants in excess of Column II effluent limitations specified on page 11 of Permit No. 01857 were allowed on 85 separate occasions to discharge. Eighteen (18) violations of toxaphene (0.52 - 16.2 mg/l) occurred between the period of October 29, 1975 to December 11, 1974. Seven TDS violations ranged from 4,163 to 26,310 mg/l. Eleven oil and grease violations ranged from 21 to 260 mg/l. Seven BOD violations ranged from 83 mg/l to 2,052 mg/l. Twenty pH violations ranged from a pH of 1.4 to 13.3. Two COD violations of 414 and 1,120 mg/l also occurred. District 6 inspection of September 29, 1975 revealed non-compliance discharge violations of pH (9.4), oil and grease (188 mg/l), TSS (92 mg/l) and Toxaphene (2.08 mg/l).

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III. Treatment System

A. Description of System:

1. Sonford Chemical Company: No treatment system - gravity flow to drains to sump to ditch to pit to 10" clay tile pipe to Jefferson Chemical Outfall Canal. No control of storm water runoff. Slop pit (600,000 gal.) utilized for waste disposal of toxaphene, pentachlorophenol, chlorinated hydrocarbons and calcium chloride.
2. H & R Chemical: No treatment system - same as Sonford Chemical Company - said to be packaging inventory only.
3. Bison Chemical Company: No treatment - same as Sonford Chemical Company.
4. Riverside Chemical Company: No treatment system - initially same as Sonford Chemical Company. Neutralization of discharge by caustic occurred after April 26, 1974. On November 8, 1975 all wastewaters except boiler blowdown and cooling water were routed to 600,000 gallon waste pond, thence to a monitoring pit where the discharge was joined by cooling water and boiler blowdown prior to discharge through 10" clay tile pipe through a levee to the Jefferson Chemical Outfall Ditch. On March 2, 1976 the boiler blowdown was routed to the holding and evaporation pond. On March 19, 1976 the pit system used for monitoring was sealed and the cooling water recycled. Outfall 001 was filled and no apparent discharges other than in storm water runoff occurred after March 1977. Only the contaminated holding and evaporation pond was utilized for wastewaters were routed to a caustic scrubber thence to a common pump utilized also for wash down wastewaters and runoff from the railroad tank car loading area prior to discharging to holding and evaporation pond and/or a back-up surge tank.

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- 18-140-11
→
5. Chemall, Inc.: Inspection report in progress - apparently no change from Riverside Chemical Co.

V. Construction Grants - Not Applicable

VI. Previous Citations and Other Enforcement Orders

1. Sonford Chemical Co.: Shut down for two months in the summer of 1971 in the face of a Texas Air Control Board order for immediate compliance with the Clean Air Act. Suit filed in February 1972 by Jefferson County for alleged air pollution problems.
2. H & R Chemical - No action
3. Bison Chemical Co.: Referred to Attorney General on October 15, 1973 by the Texas Water Quality Board for illegal discharges without a Waste Control Order - under litigation October 19, 1973. Cause D99641, 136th Judicial Court, Jefferson County - judgment 12/13/73 resulted in a civil penalty of \$2,500 and that the defendant be permanently enjoined from violating the Texas Water Quality Act.
4. Riverside Chemical Co.: District 6, CWM/GS, October 24, 1975 requested enforcement action for continued non-compliance of Permit No. 01857 and violation of the Texas Water Quality Act. Enforcement Order 75-26 effective May 26, 1976 required in general:
 - a. Immediate compliance with the reporting, monitoring and sampling requirements of Permit No. 01857 and Board Order No. 69-1219-1;

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- b. By July 1, 1976 a flow measuring device installed on Outfall 001;
- c. By July 1, 1976 an SPCCP prepared by a professional engineer experienced in industrial wastewater control technology;
- d. By July 1, 1976 a plan to eliminate any contaminated storm water discharge, prepared by a registered professional engineer, and submitted to the Executive Director of the Texas Water Quality Board for approval; and
 - (1) Within 90 days of approval of the plan - eliminate such storm water discharges;
 - (2) By no later than July 1, 1977 reduce oil and grease to not more than 15 mg/l and TOC to not more than 35 mg/l in contaminated storm water.
- e. By July 1, 1976 eliminate septic tank discharge of domestic sewage;
- f. By December 1, 1976 submit plans and specifications to limit discharges of toxaphene to 0.01 mg/l for any single grab sample, prepared by a registered professional engineer, to the Executive Director of the Texas Water Quality Board for approval; and
 - (1) Submit an application to amend Permit No. 01857 to reflect the modifications that are necessary to limit the discharge of toxaphene;

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- g. By July 1, 1977 complete all construction necessary to meet the conditions of the permit and/or an appropriately amended permit.

On June 6, 1977 all items of Enforcement Order 76-26 were said to be completed (R.C. Harnden/HCY, Jr.); however, follow-up inspections on July 21, 1977 and August 5, 1977 revealed toxaphene in storm water runoff in violation of Items 4, 6 and 7 of the order.

5. Chemall, Inc.: No action taken - inspection report in progress. Note: Letter DW/HCY, Jr./ Robert C. Harnden, Riverside Chemical Co. held Riverside Chemical Co. and the purchaser (Chemall, Inc.) jointly liable for any discharge from the pit (holding and evaporation pond).

VII. Violations (sequential table)

Violation	Data Source	Permit or Other Requirement
Sonford Chemical Co.: Discharging wastewaters to the waters of the State without a Waste Control Order	District 6 inspection of 1967(1), 1968(2), 1969(4) and 1971(2)	Section 21.251 of the Texas Water Code
Bison Chemical Co.: Discharging highly acidic wastewaters to the waters of the State without a Waste Control Order on 01/23/73	Dist. 6 inspection (LH) report of 03/29/73	Section 21.251 of the Texas Water Code

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Violation	Data Source	Permit or Other Requirement
Eastman Kodak B-11 solvent spill (1400 gal.) and diesel fuel (100 gal.) spills on 06/12/73	Dist. 6 report AG/JBL (KJ) 07/11/73	Section 21.251 of the Texas Water Code
Hydrochloric acid spill (4500 gal.) on 10/02/73	Dist. report AT/JBL (KJ) 10/09/73	Section 21.251 of the Texas Water Code
Hydrochloric acid spill (8,000 gal.) on 10/08/73	Dist. report AT/JBL (KJ) 10/09/73	Section 21.251 of the Texas Water Code
Riverside Chemical Co.: 08/06/74 - non-compliant with chlorides, TSS, and pH with 5.25 mg/l of toxaphene in storm water runoff	District 6 survey BM, 11/06/74	Permit No. 01857; Sec. 21.251 of Texas Water Code or Part II, Sec. 5 of Permit No. 01857
04/26/74 to 12/05/75 85 separate violations of non-compliance - toxaphene (18), TDS (7), oil & grease (11), BOD (7), pH (20), COD (2), TSS (20)	Dist. 6 enforcement presentation, 02/12/76	Permit No. 01857, Col. II, p. 11
09/29/75 - non-compliance with pH, oil and grease, TSS, toxaphene and possible contaminated storm water outfalls	Dist. 6 inspection of 09/29/75	Permit No. 01857, Col. II, p. 11

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Violation	Data Source	Permit or Other Requirement
No flow device	Dist. 6 enforcement presentation 02/12/76	Permit No. 01857, Board Order 69-1218-1
Failure to collect samples of final effluent monitoring point	Dist. 6 inspection of 09/29/75	Permit No. 01857
Failure to collect composite samples representative of volume and nature of monitored discharge	Dist. 6 inspection of 09/29/75	Permit No. 01857 Monitoring Requirements
Failure to collect any composite samples for the purpose of self-reporting for August 1975	Dist. 6 inspection of 09/29/75	Permit No. 01857 and Board Order No. 69-1219-1
Failed to collect required number of weekly composite samples for toxaphene and chlorinated hydrocarbons	Dist. 6 inspection of 09/29/75	Permit No. 01857 Monitoring Requirements
Unpermitted discharge from inadequate domestic tank system	Dist. 6 inspection of 09/29/75	Permit No. 01857, Part II, Sec. 5 or Sec. 21.251 of Texas Water Code
01/22/76, pH non-compliant	Dist. 6 inspection of 01/22/76	Permit No. 01857

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<u>Violation</u>	<u>Data Source</u>	<u>Permit or Other Requirement</u>
Jan. 1976 - non-compliant in pH max. and toxaphene	Self-Reporting	Permit No. 01857 and Board Order 09-1219-1
Feb. 1976 - non-compliant in pH max., 13 pH violations, COD (mg/l), not reporting toxaphene and chlorides	Self-Reporting	Permit No. 01857 and Board Order 09-1219-1
Discharging storm water containing high concentrations of toxaphene on 08/05/77 and 07/21/77	Dist. inspection report of 11/28/77	Enforcement Order 76-26, Items 4, 6, and 7 and Permit No. 01857
Mar. 1976 - non-compliant in pH max., 4 pH violations, TSS avg. (#s), BOD avg. (#s), oil & grease (mg/l) and avg. (#s), chlorides mg/l (3), TDS mg/l (3)	Self-Reporting	Permit No. 01857 and Board Order 09-1219-1
April 1976 - non-compliant with toxaphene mg/l (3), TDS mg/l (4), and chlorides mg/l (4)	Self-Reporting	Permit No. 01857 and Board Order 09-1219-1

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Violation	Data Source	Permit or Other Requirement
May 1976 - non-compliant in TSS, avg. (kg/day), toxaphene (kg/day) and (mg/l) TDS mg/l (4), chlorides mg/l (4)	Self-Reporting	Permit No. 01857 and Board Order 09-1219-1
June 1976 - non-compliant in TSS, avg. (kg/day), toxaphene, avg. (kg/day) and max. (kg/day)	Self-Reporting	Permit No. 01857 and Board Order 09-1219-1
Oct. 1975 - July 1976 not reporting chlorinated hydrocarbons analyses	Self-Reporting	Permit No. 01857 and Board Order 69-1219-1
Sept. 30, 1976 - bypassing treatment system with domestic wastewater	Dist. 6 inspection of 09/30/76	Permit No. 01857, Part II, Sec. 5 and/or Sec. 21.251 of the Texas Water Code and Enforcement Order 76-25, Item 5

VIII. Causes of Violations

1. Sonford Chemical Co.: Discharging wastewaters on District 6 inspections of 10/31/67, 02/14/68, 04/09/68, 03/04/69, 04/01/69, 04/17/69, 09/23/69, 04/26/71, and 11/03/71 without a permit. Operations were production oriented with poorly designed and corroded units resulting in pipe and valve leaks and spills with apparent conscious disregard to the Texas Water Code and the Clean Air Act

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in addition to poor housekeeping and disregard for the environment. In general, operations were "damn" sloppy.

2. Bison Chemical Co.: Discharging wastewaters on District 6 inspection of January 23, 1973 without a permit. Tank truck ran over and broke solvent line to solvent tank, then backed-up and ruptured fuel tank on June 12, 1973. Hydrochloric acid spill resulted on October 2, 1973 when valve or tank broke. Hydrochloric acid spill resulted on October 8, 1973 when Durakne resin tank ruptured and gave way. Bison Chemical Co. inherited the problems of housekeeping and corroded units from Sonford Chemical Company in addition to a large inventory which was still owned by Sonford Chemical Co. Bison tore down the old toxaphene and pentachlorophenol units and built a new toxaphene unit. In the process they contracted for disposal of 100,000 pounds of off-grade to a Denver, Colorado contractor about March 29, 1973. On September 13, 1973 Bison Chemical Co. needed 630 yards hauled off with that much to go. Operating personnel were essentially the same except for management. Bison Chemical felt that no treatment was needed.
3. Riverside Chemical Co.: Inherited Sonford Chemical Co.'s mess in addition to essentially some operating personnel, except for management. Neither the corporate structure nor the management had regard for the Texas Water Code and/or their permit which did result in the numerous violations of their permit until the enforcement hearing on February 22, 1976. The company did make an attempt to stop the discharges of wastewaters and contaminated

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storm water under the enforcement order; however, like its predecessors did not believe treatment was necessary. Toxaphene production was stopped on February 25, 1976; however, inventories were on hand and the contaminated holding and evaporation pond remained without clean-out when sold to Chemall, Inc.

4. Chemall, Inc.: Retained essentially the same operating personnel. Delayed purchase of the plant from August 31, 1977 (date of amended permit and transfer to Chemall, Inc.) to February 17, 1978 due to apparent financial status. Provisions of amended permit require treatment and apparently no treatment has been implemented as there has been no discharge reported from the plant since March 1977. A District inspection was planned prior to learning of a toxaphene disposal problem from past operations on May 15, 1979 through an indirect complaint. The toxaphene determination due to this problem and as a result of a recent inspection, should determine Chemall's present status.

Recommendations

This investigation was made in an attempt to assess the party and/or parties responsible for past disposal of toxaphene in high concentrations in Jefferson Chemical Company Outfall Ditch (Permit No. 00585-02 used formerly for process wastewaters and now used for uncontaminated storm water runoff) and onto adjacent property leased by Jefferson Chemical Co. to Union Carbide Corporation, Linde Division, Groves. Soil from construction of the latter plant was delivered to Block Sand Pit, Port Arthur and to Keown Supply Co., Port Neches for use as topsoil, which has in part ended up on several yards and in gardens ultimately leading to a complaint

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resulting in back tracking to the source. It has not at this point been determined as to whether or not the toxaphene was dredged from the ditch and/or dumped indiscriminately onto the adjacent property. It has, however, been determined that discharges containing high concentrations of toxaphene did occur through the period prior to October 31, 1967 through February 25, 1976 when toxaphene production was stopped or when pumping from the pond stopped on March 5, 1976, and/or when the pit system used for monitoring was sealed on March 19, 1976. This places the former owners - Sonford Chemical Company, H & R Chemical, Bison Chemical Co., and Riverside Chemical Co. and the operators, some serving in supervisor capacity for several of the companies as the potential responsible parties. Riverside Chemical Company continued to violate Enforcement Order 76-26 and Permit No. 01857 for the period of May 27, 1976 to September 30, 1976. It is therefore recommended that:

1. Sonford Chemical Company, H & R Chemical, Bison Chemical Co. and Riverside Chemical Co. be held responsible for the toxaphene disposal and violations of the Texas Water Code and/or the Solid Waste Act for which Union Carbide has and Jefferson Chemical may (unknown at this writing) assume the responsibility for clean-up.
2. The responsible companies listed in No. 1 above should also assume responsibility for any future violations of the Texas Water Code and/or the Solid Waste Act.
3. That Riverside Chemical Co. be held responsible for further violations of Permit No. 01857 and Enforcement Order 76-26 and be subject to appropriate enforcement action.
4. That Chemall, Inc. implement the conditions and special provisions of Permit No. 01857, as amended on August 31, 1977 and effectively transferred to them on February 17, 1978, notwithstanding any further violations found in the recent inspection for which the report is incomplete at this writing.

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5. That should further violations of storm water runoff in and/or adjacent to the plant be found, Chemall, Inc. shall assume the responsibility of clean-up and appropriate correction.
6. That should the holding pond and/or evaporation pond contain high concentrations of toxaphene in the water or sediment samples of the sludge, Chemall, Inc. shall take immediate steps to clean and dispose of the ponds contents in an approved Class I site suitable for that disposal.

Texas Department of Water Resources

INTEROFFICE MEMORANDUM

TO : Gary Schroeder (SC), Chief, Enforcement DATE: August 17, 1979
 Support, Enforcement and Field Operations

THRU :

FROM : Susan S. Ferguson, District 6

SUBJECT: Toxaphene Analyses, Chemall, Inc., Permit No. 01857
 Perimeter Ditches - Follow-up to Enforcement Action
 Request of 8/13/79

On July 9, 1979 a sampling investigation was conducted at Chemall, Inc., Permit 01857 to determine if the soils in the perimeter ditches surrounding the plant site were contaminated with toxaphene and/or chlorinated hydrocarbons and to determine if the storm water discharged into those ditches exceeded the 0.01 mg/l toxaphene limitation established in the permit.

Samples were collected at 15 locations (see map I) and recorded on COC tags SS05301 thru SS05315. Analyses were performed and the results are listed in Table I below.

TABLE I

Samples Collected 7/9/79
 Chemall, Inc. Perimeter Ditches

Site	COC Tag Number	Sample Type	Toxaphene mg/l	Cl ₂ Hydrocarbon mg/l
A	SS05302	Water	0.0058	None Detected
A ₁	SS05301	Soil	1.1 mg/kg	"
B ¹	SS05303	Water	0.018*	"
C	SS05304	Water	0.018*	"
D	SS05305	Soil	878.0 mg/kg	"
E	SS05306	Water	<0.005	"
F	SS05307	Soil	276.0 mg/kg	"
G	SS05308	Water	<0.005	"
H	SS05309	Soil	Results Incomplete	"
I	SS05310	Soil	Results Incomplete	"
J	SS05311	Water	0.016*	"
K	SS05312	Water	0.016*	"
L	SS05313	Water	0.014*	"
M	SS05314	Water	0.02*	"
N	SS05315	Water	0.018*	"

*Storm water samples in violation of 0.01 mg/l Toxaphene limitation.

Gary Schroeder
Page 2
August 17, 1979

Additional information including other sample locations and results, list of materials (products, by-product and raw materials) as well as the NPDES form 3560-3 and TDWR annual inspection form 0263 will be forthcoming pending receipt of data.

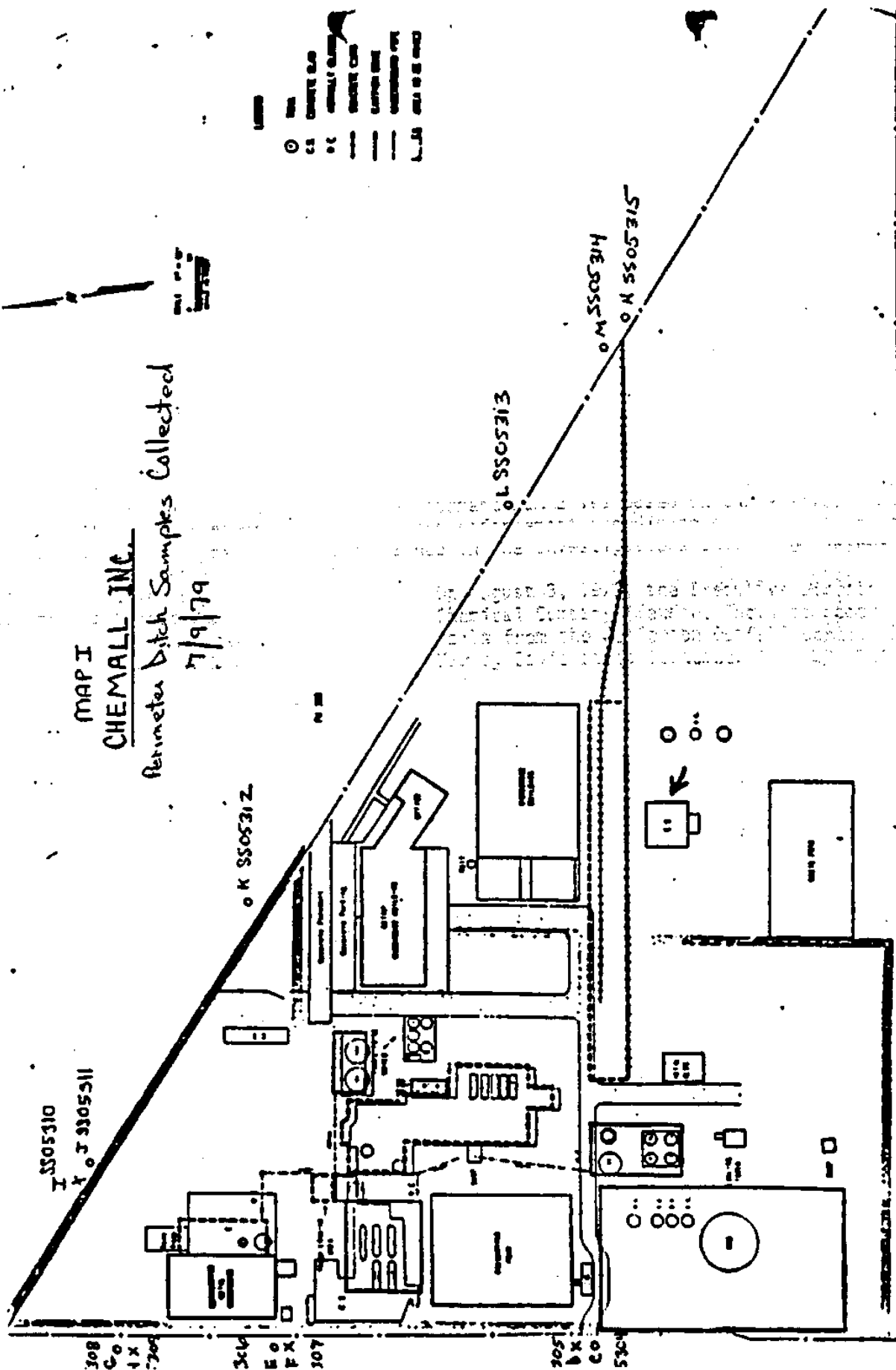
Approved:

Clarence W. Moritz
Clarence W. Moritz

Signed:

Susan S. Ferguson
Susan S. Ferguson

See Attachment



Ar

Texas Department of Water Resources

INTEROFFICE MEMORANDUM

TO : Bruce Bigelow, General Counsel
DATE: November 27, 1979
THRU : Gary D. Schroeder, Chief, Enforcement Support Section,
Enforcement and Field Operations Division
FROM : Steve Cook, Enforcement and Field Operations Division
SUBJECT: Enforcement Action: Chemall, Inc. (Permit No. 01857 and
Riverside Chemical Company (Permit No. 01857)

Attached are investigation reports concerning Chemall, Inc. and Riverside Chemical Company which bring to your attention alleged violations of Permit No. 01857. Enforcement Summaries based on these investigation reports have been circulated to the enforcement coordinators. Comments received from the coordinators are maintained in the Investigations Unit file. Pertinent comments are listed below:

On August 3, 1979, the Executive Director, TDWR, requested Jefferson Chemical Company (Texaco, Inc.) to remove all toxaphene contaminated soils from the Jefferson Outfall Canal. By their letter (D. Bruce Pope/Harvey Davis dated September 14, 1979--attached), they refused. (See Item IX,A.)

Please review these matters to determine whether enforcement action is appropriate.


Steve Cook

SSF:vw
Attachments
cc: TDWR District 6 Office

RECEIVED

NOV 30 1979

DEPT. OF
WATER RESOURCES
DISTRICT 6

INVESTIGATION REPORT

Chemall, Inc.
Permit No. 01857
Port Neches, Texas

I. Introduction

A. Identification

1. A manufacturer of chlorinated hydrocarbons operating under Permit No. 01857, issued May 22, 1974 and transferred on February 17, 1978 to Chemall, Inc.; from Riverside Chemical Company. The treatment system consists of a primary settling pond with spray evaporation--no discharge.

B. Current Discharge Limits

Parameter	Daily Average	
	(kg/D)	(ppd)
BOD ₅	4.5	10.0
COD	27.0	60.0
TSS	4.5	10.0
Oil & Grease	2.0	5.0
Toxaphene	0.0003	0.0007
Total chlorinated hydrocarbons (CCl ₄)	n/a	n/a

C. Current Special Provisions, Permit No. 01857

1. All storm water which falls within the boundaries of the plant site shall be considered to be contaminated and will be given full treatment in the treatment plant prior to discharge should samples indicate that the quality of water exceeds these limits:

TOC	70 mg/l
Oil & Grease	15 mg/l
Toxaphene	0.01 mg/l
Total Chlorinated Hydrocarbons (CCl ₄)	0.5 mg/l

2. The treatment technology considered to be the minimum necessary to properly treat the wastewaters which are authorized to be discharged by this permit during any period of plant production is considered to be neutralization, API separation, equalization, filtration, carbon absorption, or ion exchange, or reductive degradation, and any additional treatment or pretreatment necessary to stabilize biodegradable organic material to within the limits specified by this permit. An alternative treatment system may be used with prior approval from the Executive Director. No discharge of pollutants to the waters in this state is authorized by this permit unless the pollutant has received treatment in a facility which includes the processed specific above or an approved alternative. This provision applies only to process water and contaminated storm water.

Investigation Report
Chemall, Inc.
Permit No. 01857

II. Waste Load

A. Source

The permittee chlorinates waxes and oils to produce chlorinated paraffin and chlorinated oils.

There are four (4) sources of process wastewaters at the plant. The largest volume source is effluent from the caustic scrubber. Waste tail gases from the hydrochloric absorption system are passed through a scrubber containing caustic to remove chlorine. Another wastewater source is boiler blowdown. The third source of process wastewater was drainage from the process area. The fourth source consists of cooling tower blowdown.

B. Quantity and Quality

7,500 gallons of scrubber effluent are discharged to the waste pond two times a month and contain high concentrations of chlorides. Boiler blowdown contains high pH, and dissolves solids concentrations. Drain from the process area is variable in quantity and quality and would cause any spillage or leakage within the process area.

III. Treatment System

A. The waste streams identified in II.A. are pumped to the waste pond where a spray evaporation system is used.

B. Unit dimensions/capacities

Waste pond--100ft x 150ft x 6ft, with $\approx 1:2$ internal slopes
area-- $<53,424\text{ft}^2$ *
maximum capacity-- $<399,612$ gals*
capacity with 2ft freeboard-- $<266,408$ gals

*Does not include sedimentation (solids buildup)

Spray evaporation system

5hp electric pump--70 gmp
3 Sprayco "mister" nozzels

IV. Receiving Stream

A. The permit specifies the permittee discharges to Star Lake Ditch, thence into Star Lake thence into Neches Butane Products Outfall Canal thence to Segment 0601 of the Neches River Basin. However, any discharge would be to the Jefferson Outfall Canal, thence into Star Lake thence to Segment 0601 of the Neches River Basin.

B. Noncontact recreation, propagation of fish and wildlife, industrial navigation.

Investigation Report
Chemall, Inc.
Permit No. 01857

- C. Past and present discharges of contaminated storm runoff containing toxaphene in excess of the permitted limitations have been documented. Subsequently, toxaphene has been found in large concentrations in sediments in the Jefferson Outfall Canal (IOM LH, 9/25/79). Toxaphene toxicity to aquatic organisms has been well documented.

V. Grant Status

None

VI. Previous Citations and Other Enforcement Action

- A. No citations or other enforcement actions have been issued or initiated against Chemall, Inc., Permit No. 01857. Predecessors, Riverside Chemical Company and Bison Chemical Company, have been issued Enforcement Order No. 76-26 (May 26, 1976) and Judgement, Cause No. 1,799,641 (December 13, 1973), respectively.

VII. Violations

- A. The permittee has failed to notify the Texas Department of Water Resource that they have changed operations, i.e. operating with a no-discharge system, in violation of Part II.A.1. of Permit No. 01857.
- B. The permittee violated the 0.01 toxaphene limitation established in Part III of Permit No. 01857.

Violation	Data Source	Permit or Other Requirement
7/9/79--Grab Sample Toxaphene--0.018 mg/l	Chain of Custody Tag No. SS05303	0.01 mg/l
7/9/79--Grab Sample Toxaphene--0.018 mg/l	Chain of Custody Tag No. SS05304	0.01 mg/l
7/9/79--Grab Sample Toxaphene--0.016 mg/l	Chain of Custody Tag No. SS05311	0.01 mg/l
7/9/79--Grab Sample Toxaphene--0.016 mg/l	Chain of Custody Tag No. SS05312	0.01 mg/l
7/9/79--Grab Sample Toxaphene--0.014 mg/l	Chain of Custody Tag No. SS05313	0.01 mg/l
7/9/79--Grab Sample Toxaphene--0.02 mg/l	Chain of Custody Tag No. SS05314	0.01 mg/l
7/9/79--Grab Sample Toxaphene--0.018 mg/l	Chain of Custody Tag No. SS05315	0.01 mg/l

- C. Failure to treat discharges of contaminated storm water listed above as required by Permit No. 01857.
- D. Past or present storm water discharges have contaminated the soils in the perimeter ditches as evidenced by toxaphene concentrations of 878.0 mg/kg and 276.0 mg/kg within these sediments. In addition, such discharges of contaminated storm water would increase amount(s) of toxaphene retained in the receiving stream (see part IV). Interoffice memorandum dated Sept. 25, 1979 documents large concentrations of toxaphene within sediments in the receiving stream.

VIII. Causes of Violation

Storm water runoff is contaminated with toxaphene residuals from the plant site. (The plant site was contaminated with toxaphene prior to the purchase of the plant by Chemall, Inc. from Riverside Chemical Company.)

IX. Technical Recommendations

- A. Within 45 days, Chemall, Inc. shall remove all soils from the perimeter storm water ditches, adjacent to the plant site, which (a) contain more than 50.0 mg/kg toxaphene and/or (b) will leach ≥ 0.01 mg/l toxaphene in equal volumes distilled water and soil in 24 hours and dispose of such soils in site authorized in writing by the Executive Director, Texas Department of Water Resources (TDWR).
- B. Within 60 days, Chemall, Inc. shall remove all soils from the Jefferson Outfall Canal, which (a) contains more than 50.0 mg/kg toxaphene and/or (b) will leach ≥ 0.01 mg/l toxaphene in distilled water in 24 hours and dispose of such soils in a site authorized in writing by the Executive Director, TDWR.
- C. Within 90 days, Chemall, Inc. shall submit for acceptance by the Executive Director, TDWR, a plan prepared and signed by a certified professional engineer designed to eliminate any discharges of storm water containing excess of 0.01 mg/l toxaphene including a timetable for the construction of any and all appurtenances necessary to implement said plan.
- D. Within 30 days of notice of acceptance of the plan referred to in Item C by the Executive Director, TDWR, the permittee shall implement said plan.
- E. If Item 3 contains no plans for a discharge, the permittee shall submit a permit amendment to reflect the current no discharge status.
- F. Sediments in the waste pond were found to contain toxaphene concentrations in excess of 600 mg/kg. Within 45 days the permittee shall remove all sediments from the waste pond which (a) contain more than 50.0 mg/kg toxaphene and/or (b) will leach ≥ 0.01 mg/l toxaphene in equal volumes distilled water and soil in 24 hours and dispose of such soils in site authorized in writing by the Executive Director, TDWR.

Investigation Report
Chemall, Inc.
Permit No. 01857

- G. Within 30 days, Chemall, Inc. shall submit a permit amendment correcting the route of the discharge so that it reads "to the Jefferson Chemical Outfall Canal thence into Star Lake thence to Segment 0601 of the Neches River Basin."

INVESTIGATION REPORT

Riverside Chemical Company
Permit No. 01857
Port Neches, Texas

I. Introduction

A. Identification

- A. A manufacturer of chlorinated hydrocarbons operating under Permit No. 01857 issued May 22, 1976. The treatment system consists of a primary settling pond (installed by March 19, 1976). This facility was sold to Chemall, Inc. and the permit was transferred on February 1, 1978.

B. Current Discharge Limits

Parameter	Daily Average	
	(kg/D)	(ppd)
BOD ₅	4.5	10.0
COD	27.0	60.0
TSS	4.5	10.0
Oil & Grease	2.0	5.0
Toxaphene	0.0003	0.0007
Total Chlorinated Hydrocarbons (CCl ₄)	n/a	n/a

C. Current Special Provisions, Permit No. 01857.

1. All storm water which falls within the boundaries of the plant site shall be considered to be contaminated and will be given full treatment in the treatment plant prior to discharge should samples indicate that the quality of water exceeds these limits:

TOC	70 mg/l
Oil & Grease	15 mg/l
Toxaphene	0.01 mg/l
Total Chlorinated Hydrocarbons (CCl ₄)	0.5 mg/l

2. The treatment technology considered to be the minimum necessary properly treat the wastewaters which are authorized to be discharged by this permit during any period of plant production is considered to be neutralization, API separation, equalization, filtration, carbon absorption, or ion exchange, or reductive degradation, and any additional treatment or pretreatment necessary to stabilize biodegradable organic material to within the limits specified by this permit. An alternative treatment system may be used with prior approval from the Executive Director. No discharge of pollutants to the waters in this state is authorized by this permit unless the pollutant has received treatment in a facility which includes the processes specified above or an approved alternative. This provision applies only to process water and contaminated storm water.

Investigation Report
Riverside Chemical Company
Permit No. 01857

II. Waste Load

A. Source

The permittee chlorinates waxes and oils to produce chlorinated paraffins and chlorinated oils.

There are four (4) sources of process wastewaters at the plant. The large volume source is effluent from the caustic scrubber. Waste tail gases from the hydrochloric absorption system are passed through a scrubber containing caustic to remove chlorine. Another wastewater source is boiler blowdown. The third source of process wastewater was drainage from the process area. The fourth source consists of cooling tower blowdown.

B. Quantity and Quality

7,500 gallons of scrubber effluent are discharged two times a month and contain high concentrations of chlorides. Boiler blowdown contains high pH, and dissolves solids concentrations. Drainage from the process area is variable in quantity and quality and would contain any spillage or leakage within the process area.

III. Treatment System

A. Primary settling pond

100ft x 150ft x 6ft with $\approx 1:2$ internal slopes

area--< 53,424ft*

capacity-- <399,612 gals (maximum)*

<266,408 gals (with 2ft freeboard)

*Does not include sedimentation.

B. The permittee routed all waste streams to the pond by March 19, 1976. After June 1976, the permittee reported no discharge.

IV. Receiving Stream

A. The permit specified the permitted discharges to Star Lake Ditch, thence into Star Lake thence into Neches Butane Products Outfall Canal thence to Segment 0601 of the Neches River Basin. However, any discharge would be to the Jefferson Chemical Outfall Canal thence into Star Lake thence to Segment 0601 of the Neches River Basin.

B. Noncontact recreation, propagation of fish and wildlife, industrial navigation.

Investigation Report
Riverside Chemical Company
Permit No. 01857

- C. Past and present discharges of contaminated storm runoff containing toxaphene in excess of the permitted limitations have been documented. Subsequently, toxaphene has been found in large concentrations in sediments in the Jefferson Outfall Canal (IOM LH, 9/25/79). Toxaphene toxicity to aquatic organisms has been well documented.

V. Grant Status

None

VI. Previous Citations and Other Enforcement Action

Riverside Chemical Company was issued Enforcement Order No. 76-26 on May 26, 1976. Copy of said order is included as Attachment I.

VII. Violations

- A. The permittee has never complied with Provision 4 of Enforcement Order No. 76-26 requiring the company to eliminate any storm water discharges containing detectable amounts of toxaphene.

<u>1. Violation*</u>	<u>Data Source</u>	<u>Permit or Other Requirement</u>
7/21/79--Grab Sample Toxaphene--260.0 Pentachlorophenol--4.55	Chain of Custody Tag No. IN06108	Enforcement Order No. 76-26, Part III of Permit 01857
7/21/79--Grab Sample Toxaphene--210.0 Pentachlorophenol--35.2	Chain of Custody Tag No. IN06109	Enforcement Order No. 76-26, Part I of Permit 01857
8/5/77--Grab Sample Toxaphene--168 Pentachlorophenol--35.2	Chain of Custody Tag No. IN06128	Enforcement Order No. 76-26, Part I of Permit 01857
8/5/77--Grab Sample Toxaphene--interference Pentachlorophenol--12.4	Chain of Custody Tag No. IN06126	Enforcement Order No. 76-26, Part I of Permit 01857
8/5/77--Grab Sample Toxaphene--48 Pentachlorophenol--108	Chain of Custody Tag No. IN06139	Enforcement Order No. 76-26, Part I of Permit 01857
8/5/77--Grab Sample Toxaphene--330 Pentachlorophenol--7.8	Chain of Custody Tag No. IN06127	Enforcement Order No. 76-26, Part I of Permit 01857

*expressed in ug/l.

Investigation Report
Riverside Chemical Company
Permit No. 01857

<u>Violation*</u>	<u>Data Source</u>	<u>Permit or Other Requirement</u>
8/5/77--Grab Sample Toxaphene--100 Pentachlorophenol--2,330	Chain of Custody Tag No. IN06125	Enforcement Order No. 76-26, Part III of Permit 01857

*expressed in ug/l

2. The permittee failed to treat the discharges listed above as required by Permit No. 01857.

B. The permittee consistently and frequently violated the wastewater limitat established in Permit No. 10857.

<u>1. Violation</u>	<u>Data Source</u>	<u>Permit or Other Requirement</u>
Toxaphene--0.04 kg/day daily average	Self-reporting June 1976 IOM--AT/File--7/14/76	0.02 kg/day
TSS--5.2 kg/day daily average	Self-reporting June 1976 IOM--AT/File--7/14/76	4.5 kg/day
6/17/76 Toxaphene 0.04 kg/day daily maximum	IOM--AT/File---7/14/76	0.03 kg/day 24-hour composite
6/16/76 Toxaphene--0.07 kg/day daily maximum	IOM--AT/File---7/14/76	0.03 kg/day 24-hour composite
6/15/76 Toxaphene--0.07 kg/day daily maximum	IOM--AT/File--7/14/76	0.03 kg/day 24-hour composite
TSS--5.3 kg/day	Self-reporting May 1976 IOM--AT/File--7/14/76	4.5 kg/day
5/11/76 Toxaphene--0.04 kg/day daily maximum	IOM--AT/File--7/14/76	0.03 kg/day 24-hour composite

2. Tables I through VI (Attachment II) document 18 toxaphene violations, 20 TSS violations, 7 TDS violations, 11 oil and grease violations, 7 BOD₅ violations, and 20 ph violations as compiled from a review of company records dated April 26, 1974 to December 5, 1975.

Investigation Report
Riverside Chemical Company
Permit No. 10857

VIII. Causes of Violations

Storm water runoff is contaminated with toxaphene residuals from the plant site. The plant site was contaminated through sloppy operations and lack of groundskeeping. Wastewater discharges have been in violation of the limitations established in Permit No. 01857 due to the permittee's failure to provide adequate treatment.

IX. Technical Recommendations

- A. Within 45 days, Riverside Chemical Company shall remove all soils from the perimeter storm water ditches, adjacent to the plant site, which (a) contain more than 50.0 mg/kg toxaphene and/or (b) will leach greater than or equal to 0.01 mg/l toxaphene in equal volumes distilled water and soil in 24 hours and dispose of such soils in a site authorized in writing by the Executive Director of the Texas Department of Water Resources (TDWR).
- B. Within 60 days, Riverside Chemical Company shall remove all soils from the Jefferson Outfall Canal which (a) contain more than 50.0 mg/kg toxaphene and/or (b) will leach greater than or equal to 0.01 mg/l toxaphene in distilled water in 24 hours and dispose of such soils in a site authorized in writing by the Executive Director of the TDWR.
- C. Within 90 days, Riverside Chemical Company shall submit for acceptance by the Executive Director of the TDWR a plan prepared and signed by a certified professional engineer designed to eliminate any discharges of storm water containing in excess of 0.01 mg/l toxaphene including a timetable for the construction of any and all appurtenances necessary to implement said plan.
- D. Within 30 days of notice of acceptance of the plan referred to in Item 3 by the Executive Director of the TDWR, the company shall implement said plan.

NO. D116345

STATE OF TEXAS § IN THE DISTRICT COURT
 §
 § PLAINTIFF
 §
VS. § OF JEFFERSON COUNTY, TEXAS
 §
CHEMALL, INC., §
 §
 § 136 JUDICIAL DISTRICT
 §

AGREED FINAL JUDGMENT

BE IT REMEMBERED THAT ON THIS 13th day of December, 1982, came on to be heard the above entitled and numbered cause, said cause being an action prosecuted by Plaintiff, State of Texas, against Defendant, Chemall, Inc., for alleged violations by Defendant in Jefferson County, Texas of Chapter 26 of the Texas Water Code and The Rules and Regulations of the Texas Department of Water Resources, and came Defendant by and through its attorney of record, and came Plaintiff by and through its attorney of record, and the parties announced to the Court that all matters alleged by Plaintiff in this case had been settled, agreed and compromised, subject to the approval of this Court, based on entry of this Judgment agreed upon by the parties and recommended to the Court; and the parties jointly moved the Court for entry of such agreed upon and recommended Judgment; and

The Defendant having waived all formalities of Rules 680-693, Texas Rules of Civil Procedure, and acknowledging an understanding of the terms contained in the Judgment, following participation in settlement negotiations and waiving writ of execution, and acknowledging receipt of a copy of this Judgment, and waiving all right of appeal; and it appearing to the Court that the agreed upon and recommended Judgment is in all respects proper and necessary at this time, it is, therefore, ORDERED, ADJUDGED AND DECREED as follows:

I.

Defendant Chemall, Inc., shall complete closure of their existing inactive waste pond in accordance with the rules, regulations and technical guidelines of the Texas Department of Water Resources no later than 22 weeks from the date of this

May 16, 1983
Extended - Sept. 30, 83 DEPT. OF
WATER RESOURCES

Judgment. Such closure shall be subject to Department review and approval and may be accomplished by disposal of existing contaminated wastewater at an approved disposal facility; removing remaining sludges to an approved disposal facility or solidifying sludges in place; filling of the emptied pit area with earthen fill material; capping the pit area with a three foot deep layer of compacted clay material; vegetating the capped fill material; and recording this Judgment, a plat of this property including the location of the prior pit and the proposed treatment facility and a statement that there may be residual toxaphene contamination on the plant property, in the deed records of Jefferson County, Texas.

II.

Defendant, Chemall, Inc. shall design, construct and ^{11/21} implement a wastewater treatment system within 70 weeks from the date of this Judgment in accordance with the general design schedule contemplated by the documents titled "Chemall Wastewater Compliance Schedule," copies of which are attached hereto and made a part of this Judgment. The wastewater treatment system will be subject to standard Texas Department of Water Resources review and approval for such facilities, and will be designed and operated to assure compliance with toxaphene discharge limitations imposed by Permit No. 08157, as amended.

III.

Defendant Chemall, Inc. shall remove all toxaphene contaminated sediments from all ditches adjacent to and contiguous with Defendant's plant-site property, with the exception of the Jefferson Canal, to a point where concentration of toxaphene leachate does not exceed .04 mg/l. This toxaphene removal shall be completed no later than 4 weeks from the date of completion of the wastewater treatment system required by this judgment. Such toxaphene removal shall be subject to review and approval by the Texas Department of Water Resources in accordance with the standard TDWR Leachate Test as described in TDWR Technical Guide Number 1.

IV.

Defendant Chemall, Inc., its agents, representatives and employees are hereby permanently restrained, prohibited and enjoined from violating any of the terms of Texas Department of Water Resources Permit No. 01857, as amended, a copy of which is attached hereto and made a part of this Judgment.

IT IS FURTHER ORDERED, ADJUDGED and DECREED that Plaintiff, State of Texas, have and recover from Defendant Chemall, Inc. the sum of FOURTEEN THOUSAND DOLLARS (\$14,000.00) civil penalties in satisfaction of all violations of the Texas Water Code alleged in Plaintiff's Original Petition and Application for Permanent Injunction.

IT IS FURTHER ORDERED, ADJUDGED and DECREED that Defendant pay all costs of court.

SIGNED and ENTERED this 13th day of December, 1982.

/s/ Robt(?) King
JUDGE PRESIDING

APPROVED AS TO FORM AND SUBSTANCE
AND ENTRY REQUESTED:

MARK WHITE
ATTORNEY GENERAL OF TEXAS

/s/
MICHAEL LEBURKIEN
SBN 12100650
Assistant Attorney General
Environmental Protection Division

1220 Dallas, Suite 202
Houston, Texas 77002

ATTORNEYS FOR PLAINTIFF
STATE OF TEXAS

Paul G. GosseLink
PAUL G. GOSSELINK
SBN 08222800

BOOTH, LLOYD AND SIMMONS, P.C.
302 San Jacinto Building
Austin, Texas 78701

ATTORNEYS FOR DEFENDANT
CHEMALL, INC.

CHEMALL, INC. BY ITS AUTHORIZED
AGENT, JERRY P. MOHN, PRESIDENT
CHEMALL, INC.

TEXAS DEPARTMENT OF WATER RESOURCES
P. O. Box 13087 Capitol Station
Austin, Texas 78711

W 7
DM
SW

TELEPHONE MEMO TO THE FILE

Call To: L. D. Bryant, DD #7 Call From: M. Moore, Dist. 6
Date of Call: March 22, 1983 File No: _____
Subject of Call: Contaminated soil dredged from drainage ditch below FM Road 366
in Port Neches, Jefferson County.

Information for File: I told Mr. Bryant that TDWR had sampled soil dredged from
the drainage ditch below FM Road 366, and that we suspected that the
soil contained hazardous wastes (eg: toxaphene and pentachlorophenol)
I requested that DD #7 remove the soil from the banks of the ditch
and have it disposed of in an approved facility.

Mr. Bryant furnished me with the following information:

- 1) The ditch was dredged by drag-line beginning about six weeks
ago, with the project being completed approximately two weeks
ago;
- 2) The ditch has never been dredged before, since it was a natural
drainage area, and DD #7 did not previously have an easement on
the property, which is owned by Texaco Chemicals;
- 3) Approximately one year ago, DD #7 acquired an easement on the
ditch in order to improve area drainage, but the property is
still owned by Texaco Chemicals;
- 4) Mr Bryant also pointed out that the area is very marshy, and
pallets had to be used to support the equipment during the
dredging operation;
- 5) Mr. Bryant recalled that for many years Texaco (then Jefferson

Chemical Co.), Riverside, and Sonford Chemical companies discharged chemical wastes into the ditch, and he speculated that a variety of chemical residues still exist in the sediments.

- 6) Mr. Bryant also said that DD #7 is planning to concrete the ditch from FM 366 upstream to the point at which it is already lined and downstream to the railroad crossing.

I recommended that the drainage district contact TDWR prior to beginning any further work on the ditch. I also agreed to let him know what the laboratory analysis results show on the samples we collected on March 21, 1983.

TEXAS DEPARTMENT OF WATER RESOURCES
P. O. Box 13087 Capitol Station
Austin, Texas 78711

TELEPHONE MEMO TO THE FILE

Call To: A.W. Catanach, Texaco Chemical Co. Call From: M. Moore, Dist. 6

Date of Call: March 23, 1983

File No: 30029

Subject of Call: Jefferson Canal - Texaco Chemical Co. Reg. No. 30029

Information for File: I informed Mr. Catanach that we are investigating possible chemical contamination in the Jefferson Canal downstream from Hogaboom Road in Port Neches. I told him that we had been informed that the canal is located on property owned by Texaco Chemical Co. I also told him that we had noted strong phenolic odors in sediments which had recently been dredged from the canal below FM 366 and disposed along the canal bank, as well as in the sediments in the canal between Hogaboom Road and FM 366.

I recommended that Texaco Chemical Co. immediately remove and properly dispose of the dredge spoils which were removed in order to prevent contaminated run-off from re-entering the canal. I also recommended that the company determine the extent of contamination remaining in the canal between Hogaboom Rd. and Star Lake and begin remedial action to remove such contaminated material that is determined to exist in the canal.

I informed Mr. Catanach that the results of our investigation would soon be forwarded to the Central Office for appropriate enforcement action. I also mentioned that if hazardous wastes or hazardous waste constituents exist in the canal, this would constitute violations of

the Texas Solid Waste Disposal Act and the Texas Water Code.

Mr. Catanach thanked me for informing him of the investigation and said that he would relay the information to appropriate corporate officials for review. He said that the company had no objections to TDWR representatives entering Texaco Chemical property in the vicinity of the canal to continue our investigation.

Michael A. Moore

Signed

C-415

Texas Department of Water Resources

INTEROFFICE MEMORANDUM

TO : Gary Schroeder, Chief, Solid Waste and Spill
THRU : Response, Enforcement and Field Operations

FROM : Harry D. Boudreaux, District 6 Supervisor

SUBJECT: Enforcement Action--Texaco Chemical Company,
Registration No. 30029

DATE: April 5, 1983

Attached is an Enforcement Report concerning Texaco Chemical Co., Registration No. 30029. In reviewing this report, prepared by Michael Moore, I find that it is accurate and that the proposed recommendations will bring about the correction of those problems which are causing the violations. Please review this matter for appropriate enforcement action.


Harry D. Boudreaux

Attachment

INVESTIGATION REPORT

Texaco Chemical Company
Registration No. 30029
P.O. Box 847
Port Neches, Texas 77651

VII. Technical Recommendations

- A. It is recommended that all contaminated materials be properly disposed of.
- B. It is recommended to determine the extent of contamination in the Jefferson Canal and Star Lake and dispose of the same.
- C. It is recommended that adequate measures be taken to prevent the discharge of wastes, via the waterways.

I. Introduction

A. Identification

- 1. Name of facility: Texaco Chemical Company
- 2. Location: Farm Road 366, Port Neches, Texas

B. Permits and Registrations

- 1. Permits: WCO No. 00585; TX000560
- 2. Registration: 30029

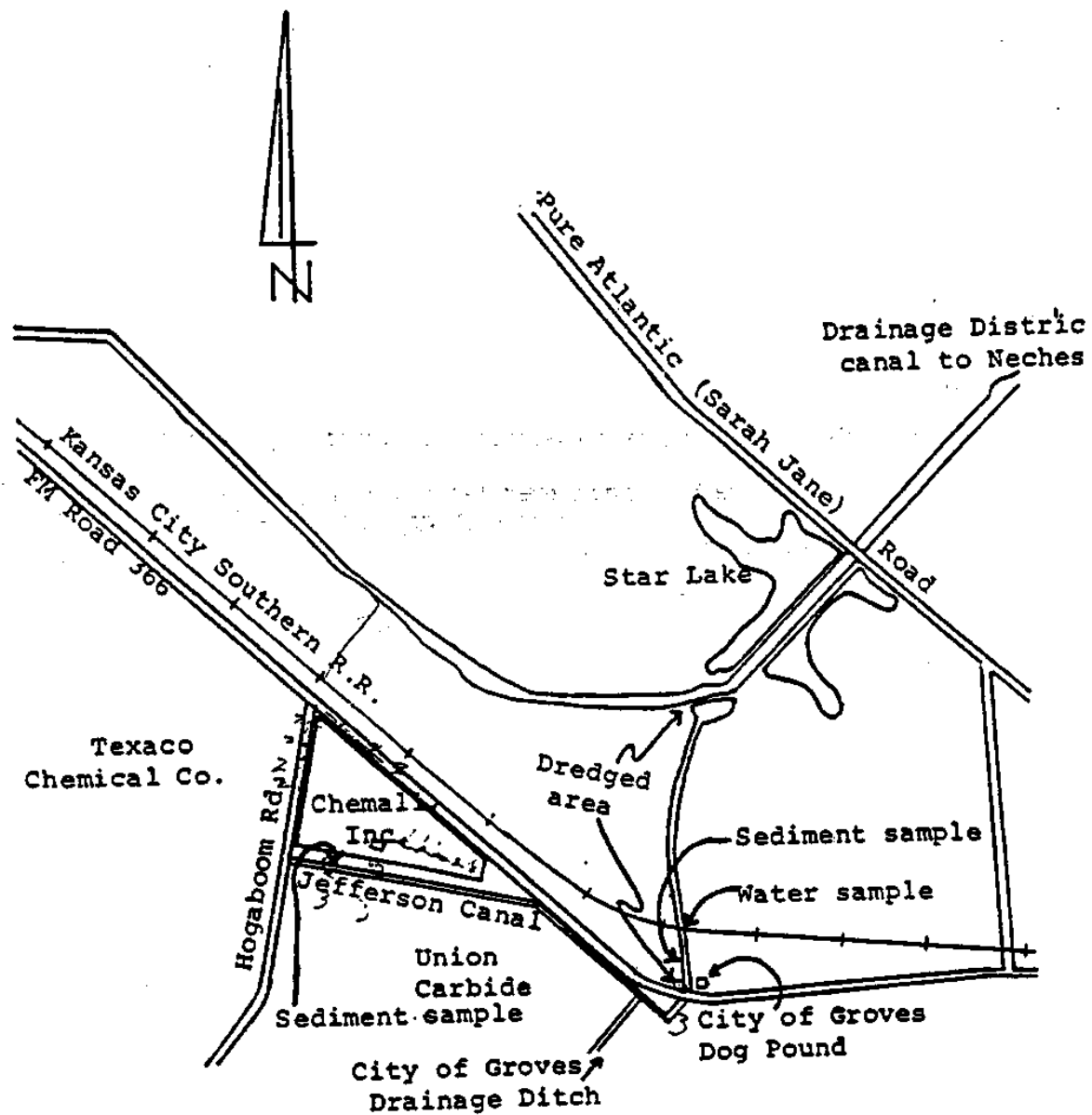
C. Permit provisions: Texaco Chemical Company, which manufactures the following organic chemicals: ethylene oxide, ethylene glycols, propylene glycols, morpholine, diglycoamine, oil additives, amines, and ethylene oxide/propylene glycol. The permit requires control discharge of uncontaminated effluent to the Jefferson Canal at Hogaboom Road (NPDES Permit No. 00511) Department of Water Resources (TDWR) is treated at the Neches Butane Production Facility (Permit No. 00511).

D. Background information: The Jefferson Lake, is located on property owned by the Jefferson Chemical Company. Other previous owners of the facility who have caused contamination of the Jefferson Canal are listed in the court action dated August 13, 1979, August 17, 1979, and the court action against one of these companies is listed in the Agreed Final Judgement, Cause No. 00511, Jefferson County, Texas, signed on August 13, 1979.

II. Waste Handling Facility

A. Type of facility: Drainage ditch

B. Description of facility: The drainage ditch is located on Farm Road 366, between Chemall, In Road 366 to Star Lake (see attached map). The ditch is approximately 15 feet deep and 50 feet wide at the bottom. The ditch is located between Farm Road 366 and Star Lake. Wastes were discharged to the ditch from the pentachlorophenol process wastes, between Farm Road 366 and Star Lake.



12/2/83
SMY
12

Texas Department of Water Resources


INTEROFFICE MEMORANDUM

TO : Harry D. Boudreaux, District 6 Supervisor,
District 6 Office
THRU :

DATE: April 14, 1983

FROM : Gary D. Schroeder, Chief, Solid Waste and Spill Response Section,
Enforcement and Field Operations Division
SUBJECT: Enforcement Action - Texaco Chemical Company
Registration No. 30029

A memorandum regarding the above subject has been received by this office. The matter has been assigned to Mr. Mike Dick of the Solid Waste Compliance Unit for necessary action. I understand that Mr. Michael Moore is the field representative dealing with this matter, and Mike will contact Michael in due course. Meanwhile, if you or Michael have any questions or additional information, please feel free to contact Mike directly.


Gary D. Schroeder

BWD:tm

RECEIVED

APR 18 1983

DEPT. OF
WATER RESOURCES
DISTRICT 6

TEXAS DEPARTMENT OF WATER RESOURCES

1700 N. Congress Avenue
Austin, Texas



Charles E. Nemir
Executive Director

TEXAS WATER DEVELOPMENT BOARD

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Louie Welch

TEXAS WATER COMMISSION

Lee B. M. Biggart, Chairman
Felix McDonald
John D. Stover

May 26, 1983

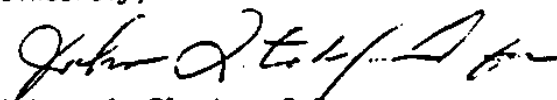
Mr. M. J. Adair
Commissioner
Drainage District No. 7
4401 9th Street
Port Arthur, Texas 77640

Dear Commissioner Adair:

Re: Disposal of Contaminated Dredge Spoil from Jefferson Canal;
Solid Waste Registration No. 30029

The purpose of this letter is to summarize the meeting held May 19, 1983. This meeting was held to discuss the disposal of dredge spoil from Jefferson Canal. It is the Department's understanding that the parties present would review the analytical data submitted at the meeting and contact the Department by June 9, 1983 with their respective entities' intentions regarding this matter. Therefore, the Department fully expects a response by this date. If you have any questions in the interim, please contact Mr. Michael Dick at 512/475-5516.

Sincerely,


Robert G. Fleming, P.E.

Director
Enforcement and Field Operations Division

MGD:rn

ccs: Ms. Mary Reagan, Office of the General Counsel
Texas Department of Water Resources District 6 Office

RECEIVED

MAY 31 1983

DEPT. OF
WATER RESOURCES
DISTRICT 6

TEXAS DEPARTMENT OF WATER RESOURCES

1700 N. Congress Avenue
Austin, Texas



Charles E. Nennir
Executive Director

June 30, 1983

TEXAS WATER DEVELOPMENT BOARD

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TEXAS WATER COMMISSION

Lee B. M. Biggart, Chairman
Felix McDonald
John D. Stover

Mr. J. Samuel Listiak
Texaco Butadiene Company
Texaco, Inc.
P. O. Box 52332
Houston, Texas 77052

Dear Mr. Listiak:

Re: Disposal of Contaminated Dredge Spoil From Jefferson Canal

This letter is written in response to your letter of June 7, 1983, indicating that your company needed additional time to evaluate the issues discussed in our May 19, 1983 meeting. The Department expects the response requested in that meeting to be submitted no later than July 5, 1983.

The Department appreciates your attention to this matter and if you have any questions, please contact Mr. Michael Dick at 512/475-5516.

Sincerely,

A handwritten signature in cursive script, appearing to read "Robert G. Fleming".

Robert G. Fleming, P.E.
Director
Enforcement and Field Operations Division

MGD:rn

ccs: Office of the General Counsel
Texas Department of Water Resources District 6 Office

RECEIVED

JUL 05 1983

STATE OF
WATER RESOURCES
DISTRICT 6

Texas Department of Water Resources

INTEROFFICE MEMORANDUM

TO : Enforcement Coordinators

DATE: August 3, 1983

THRU *Ans* Gary D. Schroeder, Chief
Solid Waste and Spill Response Section
Enforcement and Field Operations Division

FROM : Mike Dick, Solid Waste Compliance Unit,
Solid Waste and Spill Response Section

SUBJECT: Enforcement Notice - Texaco Chemical Company, Registration No. 30029 and
Drainage District No. 7

The Solid Waste Compliance Unit is reviewing Texaco Chemical Company and Drainage District No. 7 for enforcement action. Please review the attached investigation report and provide your comments in writing within 10 days to me.

Mike Dick

Mike Dick

MGD:rn

Attachment

ccs: Office of the General Counsel
Texas Department of Water Resources District 6 Office

RECEIVED

AUG 05 1983

DEPT. OF
WATER RESOURCES
DISTRICT 6

INVESTIGATION REPORT

Texaco Chemical Company
Registration No. 30029
P.O. Box 847
Port Neches, Texas 77651

I. Introduction

A. Identification

1. Name of facility: Texaco Chemical Company
2. Location: Farm Road 366, Port Neches, Texas

B. Permits and Registrations

1. Permits: WCO No. 00585; TX0005606
2. Registration: 30029

C. Permit provisions: Texaco Chemical Company is a petrochemical plant which manufactures the following organic chemicals: ethylene/propylene, ethylene oxide, ethylene glycols, propylene glycols, glycol ethers, morpholine, diglycoamine, oil additive TC-9781, nonylphenols, ethanolamines, and ethylene oxide/propylene oxide adducts. Wastewater permits control discharge of uncontaminated storm water only. Outfall is into Jefferson Canal at Hogaboom Road (NPDES Outfall 002 is the same as Texas Department of Water Resources (TDWR) Outfall 001). Process wastewater is treated at the Neches Butane Products Company regional treatment facility (Permit No. 00511).

D. Background information: The Jefferson Canal, from Hogaboom Road to Star Lake, is located on property owned by Texaco Chemical Company (formerly Jefferson Chemical Company). Other background information, including previous owners of the facility which is a suspected contributor to the contamination of the Jefferson Canal, is contained in the attached reports dated August 13, 1979, August 17, 1979, and November 27, 1979 (enforcement action against one of these companies, Chemall, Inc., was resolved in the Agreed Final Judgement, Cause No. D116345, 136th Judicial District Court, Jefferson County, Texas, signed on December 13, 1982).

II. Waste Handling Facility

A. Type of facility: Drainage ditch

B. Description of facility: The drainage ditch runs from Hogaboom Road to Farm Road 366, between Chemall, Inc. and Union Carbide; thence below Farm Road 366 to Star Lake (see attached map). The ditch is approximately 15 feet deep and 50 feet wide at the top. The distance between Hogaboom Road and Star Lake is approximately one mile. In past years, various wastes were discharged to the ditch, including untreated toxaphene and pentachlorophenol process wastes. During the past two months, the ditch between Farm Road 366 and Star Lake was dredged, and the contaminated

dredgings were placed along the north bank of the ditch.

III. Water Quality Impact

- A. Surface water: Samples were collected at the railroad crossing below Farm Road 366 on March 23, 1983 after a 2.5-inch rain (Chain of Custody (COC) Tag Numbers SW 02094 and SW 02096). Laboratory analysis results for these samples will be forwarded in an addendum report when received by this office.
- B. Ground water: Unknown; no shallow wells have thus far been identified in the area.

IV. Previous enforcement: See attached reports dated August 13, 1979, November 27, 1979, and Agreed Final Judgement dated December 13, 1982.

V. Violation

<u>Violation</u>	<u>Data Source</u>	<u>Permit or Other Requirement</u>
Disposal of hazardous wastes in such a manner so as to cause the discharge or imminent threat of discharge of wastes into or adjacent to the waters in the State.	Reports dated 08/13/79, 08/17/79, and 11/27/79; COC Tag Nos. SW 02090, SW 02091, SW 02094, and SW 02096 (pending).	Texas Solid Waste Disposal Act; Texas Water Code

VI. Causes of violation: For an undetermined period of time, Jefferson Chemical Co. (presently owned by Texaco Chemical Co.) and/or the various owners and operators of the facility now owned by Chemall, Inc. disposed of wastes and contaminated wastewater into the Jefferson Canal, which is located on property owned by Texaco Chemical Company. On August 3, 1979 Texaco Chemical Company was requested by TDWR to remove the contaminated materials from the ditch, but the request was refused by the company (see interoffice memorandum dated 11/27/79, S. Cook to B. Bigelow). On March 21, 1983 TDWR District 6 representatives Michael Moore and Wesley Newberry inspected the ditch and collected sediment samples. The samples were observed to have a strong aromatic odor characteristic of phenolic compounds (COC Tag No. SW 02090). A sample was also collected from soil which had recently been dredged from the ditch below Farm Road 366 and it was observed that this material had a similar odor (COC Tag No. SW 02091). During a follow-up inspection conducted on March 23, 1983 it was observed that rainfall runoff from the dredge disposal area was entering the canal. A sample of the runoff was collected and it also had a strong phenolic odor (COC Tag No. SW 02094). It appears probable that hazardous waste including toxaphene and pentachlorophenol, are being discharged to the waters of the State from the sediments in the canal and from the dredgings which were recently disposed along the bank of the canal.

VII. Technical Recommendations

- A. It is recommended that, within 20 days, Texaco Chemical Company remove all contaminated dredgings from the bank of the Jefferson Canal and dispose of such wastes in an approved facility.
- B. It is recommended that, within 30 days, Texaco Chemical Company determine the extent of contamination present in the sediments of the Jefferson Canal and Star Lake; and within 60 days, remove all contaminated sediment and dispose of such wastes in an approved facility.
- C. It is recommended that, during the course of the cleanup activities, adequate measures be taken to prevent further discharges of hazardous wastes, via rainfall runoff and mixing of sediments with canal water, to the waters of the State.

12
SWMM, LTH
EP

Texas Department of Water Resources

INTEROFFICE MEMORANDUM

TO : Susan Plettman, General Counsel

DATE: August 4, 1983

THRU :

FROM : Robert G. Fleming, Director,
Enforcement and Field Operations Division

SUBJECT: Request for Enforcement Action Texaco Chemical Company,
Registration No. 30029 and Drainage District No. 7,
No Registration or Permit

Enforcement and Field Operations Division hereby requests that the Office of the General Counsel schedule immediate enforcement action concerning Texaco Chemical Company and Drainage District No. 7. Attached is the original Investigation Report regarding this matter.

Robert G. Fleming
Robert G. Fleming

NGD:rn

Attachments

cc: Texas Department of Water Resources District 6 Office

RECEIVED

AUG 08 1983

DEPT. OF
WATER RESOURCES
DISTRICT 6

TEXAS DEPARTMENT OF WATER RESOURCES

1700 N. Congress Avenue
Austin, Texas



Charles E. Nemir
Executive Director

August 8, 1983

TEXAS WATER DEVELOPMENT BOARD

Louis A. Beecherl, Jr., Chairman
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Lonnie A. "Bo" Pilgrim
Louie Welch

TEXAS WATER COMMISSION

Felix McDonald, Chairman
Lee B. M. Biggart
John D. Stover

Mr. J. Samuel Listiak
Texaco Butadiene Company
Texaco, Inc.
P.O. Box 52332
Houston, Texas 77052

Dear Mr. Listiak:

Re: Disposal of Contaminated Dredge Spoil from Jefferson Canal

The Department is in receipt of your letter dated July 22, 1983 which states Texaco's analytical data of the dredge spoil shows concentrations of contaminants approximately one thousand times lower than those documented by the Department. In light of this matter, the Department would like to offer the following comments:

1. The types of compounds which have been found in the dredge spoil are relatively resistant to degradation, therefore, this would not support a theory of degradation between sampling events.
2. Texaco's samples may have come from different areas of the dredge spoil than those collected by the Department.
3. The samples collected by the Department were analyzed by the Texas Department of Health and were reported in mg/kg (ppm) and not in parts per billion as suggested by Texaco.

In any case, the Department stands by its results. However, it may well be that the degree of contamination varies throughout the dredge spoil. Therefore, we request that Texaco and Drainage District Number 7 initiate a comprehensive sampling effort to determine what type of disposal will be required.

In regard to your question concerning the responsibility of Drainage District No. 7, the Department reiterates that this matter is the responsibility of both parties. The Department hopes this situation will be resolved voluntarily between Texaco and the Drainage District.

RECEIVED

AUG 10 1983

OFF. OF
WATER RESOURCES
DISTRICT 6

Mr. J. Samuel Listiak
Page 2

Please submit a response detailing Texaco's intentions within 10 days upon receipt of this letter, otherwise we will pursue alternative measures to ensure this problem is resolved. If you have any questions in the interim, please contact Mr. Michael Dick at 512/475-5516 or Ms. Mary Reagan at 512/475-7845.

Sincerely,



Robert G. Fleming, P.E.
Director
Enforcement and Field Operations Division

MGD/jp

cc: Office of the General Counsel
Texas Department of Water Resources District 6 Office

TEXAS DEPARTMENT OF WATER RESOURCES

1700 N. Congress Avenue
Austin, Texas



Charles E. Nemir
Executive Director

TEXAS WATER DEVELOPMENT BOARD

W. A. Beebe, Jr., Chairman
George W. McCleskey, Vice Chairman
Glen E. Roney
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Lennie A. "Bo" Pilgrim
Frank Welch

TEXAS WATER COMMISSION

Felix McDonald, Chairman
Lee B. M. Biggart
John D. Stover

August 9, 1983

Mr. M. J. Adair
Commissioner
Drainage District No. 7
4401 9th Street
Port Arthur, Texas 77640

Dear Commissioner Adair:

Re: Disposal of Contaminated Dredge Spoil from Jefferson Canal

The Department is in receipt of the letter dated June 8, 1983 from your attorney, Mr. David A. Provost, which states that the District neither created nor added to any environmental pollution that already existed in Jefferson Canal by disposing of dredge spoil adjacent to the canal. The Department does not agree with this contention. While the contaminants remained in the sediment of the canal covered by a silt layer, they were less likely to commingle with the overlying water. Once the sediments were removed and stockpiled adjacent to the canal, increased contamination is occurring from runoff from the spoil directly to the waters of the canal. This phenomenon has been documented by Department samples.

Additionally, we have received a letter from Texaco, Inc. indicating that sample results collected from the dredge spoil by Texaco showed contaminant concentrations one thousand times lower than ones analyzed by the Department. The Department stands by its results; however, these results may evidence that the degree of contamination varies throughout the dredge spoil. Therefore, we request that Texaco and the Drainage District conduct a comprehensive sampling effort to determine what type of disposal from each area will be required.

Please submit a response detailing the District's intentions in regard to this matter within 10 days upon receipt of this letter. Otherwise, we will pursue alternative measures to ensure that this problem is resolved. If you have any questions in the interim, please contact Mr. Michael Dick at 512/475-5516 or Ms. Mary Reagan at 512/475-7845.

Sincerely,


Robert G. Fleming, P.E.
Director
Enforcement and Field Operations Division

MGD/jp

ccs: Office of the General Counsel
Texas Department of Water Resources District 6 Office

RECEIVED

AUG 11 1983

DEPT. OF
WATER RESOURCES
DISTRICT 6

See #50027

**TEXACO
INC.**

AUG 19 '83
**ENFORCEMENT AND
FIELD OPERATIONS**
P. O. BOX 52332
HOUSTON, TEXAS 77062
(713) 650-4221

**J. SAMUEL LISTIAK
ATTORNEY**

August 17, 1983

RE: DREDGED MATERIAL -
STAR LAKE OUTFALL CANAL

David A. Provost, Esq.
Provost, Umphrey, McPherson
& Swearingen
P. O. Box 3837
Port Arthur, Texas 77640

Dear Mr. Provost:

Enclosed is a copy of a letter from the Texas Department of Water Resources concerning the material dredged from the Star Lake Outfall Canal by Jefferson County Drainage District No. 7 and piled on its easement along the Canal by the District.

As can be determined from the August 8, 1983 letter of TDWR, the Department continues to believe that Drainage District No. 7 bears at least some responsibility in connection with this matter. Whether or not the District shares this belief, Texaco would be interested in knowing the intentions of the District concerning any further activities with regard to this matter. In particular, does the District have any present intention or willingness to share in sampling, testing, or other investigation or to share the costs of such sampling, testing, or investigation?

Inasmuch as certain sampling and testing has already been performed, an early response would be appreciated.

Sincerely,

J. SAMUEL LISTIAK

JSL
sly:1/d

David A. Provost, Esq.

-2-

August 17, 1983

cc: Robert G. Fleming, P.E.
Texas Department of Water Resources
P. O. Box 13087 - Capitol Station
Austin, Texas 78711

Mr. Michael Dick
Texas Department of Water Resources
P. O. Box 13087 - Capitol Station
Austin, Texas 78711

Mary Keegan, Esq.
Texas Department of Water Resources
P. O. Box 13087 - Capitol Station
Austin, Texas 78711

SWK# 029

AUG 19 '83

**TEXACO
INC.**

**ENFORCEMENT AND
FIELD OPERATIONS**

P. O. BOX 52332
HOUSTON, TEXAS 77052
(713) 650-4221

J. SAMUEL LISTIAK
ATTORNEY

August 17, 1983

RECEIVED

AUG 25 1983

DEPT. OF
WATER RESOURCES
DISTRICT 6

(BLIND) RE: ENVIRONMENTAL - POLLUTION
INCIDENTS - STATE WATER -
TEXACO CHEMICAL COMPANY
PORT NECHES

RE: DREDGED MATERIAL -
STAR LAKE OUTFALL CANAL

Mr. Robert G. Fleming, P.E.
Texas Department of Water Resources
P. O. Box 13087 - Capitol Station
Austin, Texas 78711

Dear Mr. Fleming:

Texaco has received your letter of August 8, 1983 which, in all likelihood, crossed in the mail with my letter of August 4, 1983.

The contract laboratory which analyzed the dredged soil samples is confident of its results, just as the Texas Department of Health is confident of its results. Nevertheless, if the discrepancy is due to variations in the dredged soil, it would be helpful to compare the Texaco sampling locations with the Department sampling locations. I will make an attempt to uncover information concerning where the samples were taken which led to the results detailed in my letter of August 4, 1983, if the Department feels it can provide similar information concerning its sampling location for purposes of comparison. Secondly, it may also be useful to split samples with the Department in an attempt to resolve the discrepancies in the results. Beyond anyother information which such additional sampling might provide, the results may well have an influence on the cost of any disposal.

With regard to Drainage District No. 7, Texaco knows of no investigation or any other efforts which may have been made by the District in connection with this matter, nor has Texaco been in communication with the District. Since recent communications from the TDWR to Texaco have not been copied to Jefferson County Drainage District No. 7, Texaco has assumed that any communications between the Department and the District were independent of the correspondence between Texaco

Mr. Robert G. Fleming

-2-

August 17, 1983

and the Department, or, that the TDWR was no longer corresponding with the District. Texaco does wish to reiterate that it does not purport to speak for Drainage District No. 7, nor has Texaco's investigation involved the participation of Drainage District No. 7. By letter Texaco has sought a clarification of the District's present position on any future involvement.

Sincerely,

J. SAMUEL LISTIAK

JSL

sly:1/c

cc: ~~Mr. Michael Dick~~

Texas Department of Water Resources
P. O. Box 13087 - Capitol Station
Austin, Texas 78711

Mary Reagan, Esq.
Texas Department of Water Resources
P. O. Box 13087 - Capitol Station
Austin, Texas 78711

DISTRICT NO. 6
WORK NO. 9085

TEXAS DEPARTMENT OF WATER RESOURCES

INSPECTION SYSTEM
INSPECTION SUMMARY REPORT
DW2800

C-1
2/24

Texaco Chemical Company, Port Neches ENTITY NAME (For Reference Only)

S W 0 0 3 0 0 2 9 1 3 PERMIT NUMBER
1 A 1 4 CARD NO.

ACTION
A-Add
C-Change

0 8 - 2 5 - 8 3
15 20
C 21

DATE OF REPORT (MMDDYY)

TYPE EFFLUENT SAMPLE
C-Composite
G-Grab

NO. OF HOURS (Comp. Only)

CITATION ISSUED?
Y-Yes
N-No

TYPE
1-Major
2-Minor

TYPE WASTE
1-Publicly Owned Domestic
2-Privately Owned Domestic
3-Industrial
4-Agricultural
5-Solid Waste Hazardous
6-Solid Waste Non-Hazardous
7-Other

Non-Commercial		Commercial		Transporters
Gen	TSD	Gen	TSD	**
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTE: * Check all appropriate boxes, e.g. if a facility is both a generator and TSD facility, check both boxes.
** In addition to checking the appropriate boxes concerning their status as generator and/or TSD facility, check this box for all hazardous waste transporters.

INSPECTION
1-Annual Compliance
2-Compliance Survey
3-Pre-Hearing
4-Pre-Grant
5-Other
6-Waste Disposal Wells
7-In-Situ Mining Wells

NUMBER OF SAMPLES FOR LAB

NUMBER OF ANALYSES

LABORATORY USED
1-State Department of Health Resources
2-Trinity River Authority
3-Sabine River Authority
4-TDWR-EPA
5-Corpus Christi City County Health Department
6-Other
7-San Antonio River Authority

SIGNATURE *W. L. Moore* 8/19/11
____ Permit Not Required
____ Permit Required
____ Permit Applied For

Texas
B

Texas Department of
INTEROFFICE

Product:

Date Received: 23 MAR 83

Description of Sample: SC

TO : Gary Schroeder, Chief, Solid Waste
Response, Enforcement and Field

FROM : Michael A. Moore, Engineering Tech
District 6

SUBJECT: Texaco Chemical Company, Registr
and Drainage District No. 7, No Re
Permit--Enforcement Action Request

From:

GC/MS ANALYSIS

① EPA PRIORITY PO

Naphthalene - 9280 mg

Acenaphthylene - 2140 m

Fluorene - 1140 mg

Acenaphthene - 330 m

Phenanthrene - 2050

Anthracene - 300 m

Fluoranthene - 275

Pyrene - 535 mg

Benz (a) anthracene -

Chrysene - 150 mg

Benz (b) fluoranthene

Benz (k) fluoranthene

Benz (a) pyrene

② Other organic

Substituted naphth

Biphenyls

Other aromatic

MAY 23 1983

Date Reported


② TCDD - 2,3,7,8

technique <2 ug

Attached is a copy of the laboratory analysis
was collected during a solid waste investig -
1983. The sample was collected from a pile
been deposited on the north bank of a draina
Kansas City Southern Railroad, behind the ci -
results indicate that significant amounts o
were present in the dredged material.

It is requested that these data be added to
mitted by this office, dated April 5, 1983.

Approved:


Harry D. Boudreaux

MAM/bk

Attachment

102. 1
 Site Name: Tabberson Outfall Canal
 Site Location: Drainage ditch between Farm 366 behind
first Medley dog pound
 County: Teffelina near Medley (Fog 366 dog)
 Method of Collection: Hand shovel and plastic bags
 Point of Collection: Drainage ditch
 Date Collected: 4-30 (am) 60 Date Shipped: 2/22/83
 Type facility: ☐ Drum; ☐ Tank; ☐ Impoundment; ☐ Landfill
☐ Waste pile; ☐ Landfarm; ☒ Other: Drainage ditch

Texas Department of Water Resources INTEROFFICE MEMORANDUM

TO : Gary Schroeder, Chief, Solid Waste and Spill Response, Enforcement and Field Operations

DATE:

THRU :

FROM : Michael A. Moore, Engineering Technician, District 6

SUBJECT: Texaco Chemical Company, Registration No. 30029 and Drainage District No. 7, No Registration or Permit--Enforcement Action Request Addendum Report

Attached is a copy of the laboratory analysis results for a sample was collected during a solid waste investigation which was conducted in 1983. The sample was collected from a pile of dredge spoils which had been deposited on the north bank of a drainage ditch between Farm 366 and Kansas City Southern Railroad, behind the city of Groves dog pound. The results indicate that significant amounts of toxaphene and other pesticides were present in the dredged material.

It is requested that these data be added to the enforcement action requested by this office, dated April 5, 1983.

Approved: Harry D. Boudreaux

Signed: Michael A. Moore

MAM/bk

Attachment



Texas Department of Health
Bureau of Laboratories
Austin, Texas

Product: Laboratory No.: EH3426 Sample No.: SW02
Date Received: 23 MAR 83 Delivered By: TDWR Condition of Seals: IN
Description of Sample: SOIL SAMPLE

From:

LABORATORY FINDINGS

GC/MS ANALYSIS

① EPA PRIORITY POLLUTANTS

Naphthalene - 9280 mg/kg

Acenaphthylene - 2140 mg/kg

Fluorene - 1140 mg/kg

Acenaphthene - 330 mg/kg

Phenanthrene - 2050 mg/kg

Anthracene - 300 mg/kg

Fluoranthene - 275 mg/kg

Pyrene - 535 mg/kg

Benz(a)anthracene - 160 mg/kg

Chrysene - 150 mg/kg

Benz(b)fluoranthene - 15 mg/kg

Benz(k)fluoranthene - 15 mg/kg

Benz(a)pyrene - 60 mg/kg

② Other organic compounds present at up to 2000 mg/kg.

Substituted naphthalenes (C₁ & C₂)

Biphenyls

Other aromatic hydrocarbons, unable to positively identify.

MAY 23 1983

Date Reported

③ TCDD - 2,3,7,8 isomer by capillary GC/MS ^{MID}
technique <2 mg/kg FORM NO. 8-33

TEXAS DEPARTMENT OF WATER RESOURCES

1700 N. Congress Avenue
Austin, Texas



Charles E. Nemin
Executive Director

TEXAS WATER DEVELOPMENT BOARD

Thomas A. Beecher, Jr., Chairman
George W. McCleskey, Vice Chairman
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Lonnie A. "Bo" Pilgrim
Lorne Welch

TEXAS WATER COMMISSION

Felix McDonald, Chairman
Lee B. M. Biggart
G. Ralph Roming

September 20, 1983

Mr. J. Samuel Listiak
Texaco Butadiene Company
Texaco, Inc.
P. O. Box 52332
Houston, Texas 77052

Dear Mr. Listiak:

Re: Disposal of Contaminated Dredge Spoil from Jefferson Canal

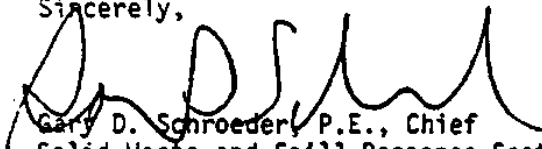
Pursuant to your telephone request on August 23, 1983 the analyses of dredge spoil were reviewed by our Permits Division for the purposes of classification.

These results indicated the material could be classified as a Class II waste and may be disposed of accordingly. The discrepancy in the quantity of materials found by Texaco and the Department may be attributed to sample locations. The Department sampled areas where visual contamination was obvious, while Texaco sampled a more representative area.

We are forwarding a copy of this letter to Drainage District #7 and request that both entities respond with their respective intentions within 10 days upon receipt.

In the interim, if you have any questions, please contact Mr. Michael Dick at 512/475-5516 or Ms. Mary Reagan at 512/475-7845.

Sincerely,


Gary D. Schroeder, P.E., Chief
Solid Waste and Spill Response Section
Enforcement and Field Operations Division

HGD:py

ccs: General Counsel's Office
Texas Department of Water Resources District 6 Office
Mr. M. J. Adair, Commissioner
Drainage District #7

RECEIVED

SEP 22 1983

DEPT. OF
WATER RESOURCES
DISTRICT 6

TEXAS DEPARTMENT OF WATER RESOURCES
1700 N. Congress Avenue
Austin, Texas

Handwritten signature and initials

TEXAS WATER DEVELOPMENT BOARD

Louis A. Beecherl, Jr., Chairman
George W. McCleskey, Vice Chairman
Glen E. Roney
W. O. Bankston
Lonnie A. "Bo" Pilgrim
Louie Welch



Charles E. Nemir
Executive Director

TEXAS WATER COMMISSION

Paul Hopkins, Chairman
Lee B. M. Biggart
Ralph Roming

December 8, 1983

Mr. J. Samuel Listiak
Texaco Butadiene Company
Texaco, Inc.
P. O. Box 52332
Houston, Texas 77052

Dear Mr. Listiak:

Re: Disposal of Contaminated Dredge Spoil from Jefferson Canal

The Department has received your letter dated October 5, 1983 in which Texaco requested our opinion in regard to creating a landfill in the vicinity of the above-referenced dredge spoil. Because this proposal does not conform with the definition of on site storage or disposal as defined in 31 Texas Administrative Code Section 335.1, the Department cannot agree to this type of environmental solution without permit authorization under the Solid Waste Disposal Act. Therefore, the Department must reiterate our original requests in this matter:

- 1) Texaco and Drainage District Number 7 should dispose of the dredge spoil at a proper site which will be determined by a representative sampling program to be initiated by the company and the district; and
- 2) Texaco and Drainage District Number 7 should initiate a sampling program to determine the degree of contamination in the sediments of the Jefferson Canal so that decisions can be made in regard to future disposal of the dredge spoil.

The Department requests that we be notified of Texaco's intentions within 15 days upon receipt of this letter.

Sincerely,

Robert G. Fleming, P.E.
Robert G. Fleming, P.E.
Director
Enforcement and Field Operations Division

MGD:py

ccs: Drainage District Number 7
Office of the General Counsel, Texas Department of Water Resources
Texas Department of Water Resources District 6 Office

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DEC 14 1983

DEPT. OF
WATER RESOURCES
DISTRICT 6



TEXAS DEPARTMENT OF WATER RESOURCES
P. O. Box 13087 Capitol Station
Austin, Texas 78711

TELEPHONE MEMO TO THE FILE

Call To: Mike Dick Call From: Wesley Newberry
Date of Call: 12-14-83 File No: _____
Subject of Call: Texaco Chemical Co. Reg. 30029

Information for File: I asked Mike if he had any reason for the
District not to send an enforcement letter to Texaco
Chemical Co. (Part 40029) concerning the recent Compliance
Inspection. Mike stated that the enforcement action
request only was concerned with Jefferson County
and that this was separate from their Solid Waste
Registration. He had no objection to the District
sending an enforcement letter.

Signed: Wesley Newberry

TEXAS DEPARTMENT OF WATER RESOURCES

1700 N. Congress Avenue
Austin, Texas



Charles E. Nemir
Executive Director

TEXAS WATER DEVELOPMENT BOARD

Louis A. Beecherl, Jr., Chairman
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Lonnie A. "Bo" Pilgrim
Louie Welch

TEXAS WATER COMMISSION

Paul Hopkins, Chairman
Lee B. M. Biggart
Ralph Roming

January 16, 1984

The Honorable Jim Mattox
The Attorney General of Texas
Supreme Court Building
Austin, Texas 78711

Attention: Mr. Jim Mathews, Chief
Environmental Protection Division

Dear General Mattox:

Re: Texaco Chemical Company, Permit No. 00588
Solid Waste Registration No. 30029
Jefferson County, Texas Drainage District No. 7

The enclosures to this letter summarize evidence which indicate that Texaco Chemical Company and Jefferson County, Texas Drainage District No. 7, are in violation of the Texas Solid Waste Disposal Act, Article 4477-7, V.A.C.S., Chapter 26 of the Texas Water Code, and the rules and regulations promulgated pursuant to these statutes. Texaco Chemical Company is a petrochemical plant manufacturing a number of organic chemicals and is located at Farm Road 366, Port Neches, Jefferson County, Texas. For an undetermined period of time, Jefferson Chemical Company, now owned by Texaco Chemical Company, disposed of wastes and contaminated wastewaters into the Jefferson Canal, which from Hogaboom Road to Star Lake is located on property owned by Texaco Chemical Company. Wastewater permits issued to the Company and its predecessor authorize discharge of uncontaminated stormwater only. As a result of this activity, and other disposal activities in the area, the sediments in the canal have become contaminated. In February, 1983, Drainage District No. 7 excavated portions of the canal and stockpiled these sediments along its banks. These disposal activities on the part of Texaco Chemical Company and Drainage District No. 7 have been conducted without authorization and in a manner so as to cause the discharge or imminent threat of discharge of wastes into or adjacent to the waters of the State.

Please accept this letter as a request for the Attorney General to represent the Texas Department of Water Resources and the Executive Director in instituting appropriate legal action for these violations. In requesting that you represent the Department in this matter, we would appreciate having the opportunity for the Department's representative Mary Reagan, Special Counsel for Hazardous Waste, to discuss this matter with your representative and assist in determining more specifically the nature of the action

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DEPT. OF
WATER RESOURCES
DISTRICT 6

JAN 16 '84

EMERGENCY AN
FIELD OPERATION.



the Honorable Jim Mattox
Page 2
January 16, 1984

necessary for representing the Department in this lawsuit. Should there be any other material, information or assistance needed, please let us know.

Sincerely yours,



Charles E. Nemir
Executive Director

Enclosure

cc: U. S. Environmental Protection Agency, Region VI

Mr. J. Samuel Listiak
Texaco Butadiene Company
Texaco Inc.
P. O. Box 52332
Houston, Texas 77052

Mr. M. J. Adair, Commissioner
Drainage District No. 7
4401 9th Street
Port Arthur, Texas 77640

TEXAS DEPARTMENT OF WATER RESOURCES
CONFERENCE ATTENDANCE

Project: Jefferson Canal

Conference: 3-6-64

Place: 1028 SFA

Name	Representing	Title Function, or Position	Phone No.
Mike Dick	TDWR	Staff	512/475-5514
Mary Reagan	TDWR	Attorney	475-7845
Ken Cross	AG	Attorney	475-1101
Pete Steele	DD7 DD7	Attorney	409/963-010
W.C. Vetter	Dawson Dist #7	Engineer	409/985-43 405
Mr. J. Davis	" "	Comm.	879-946
J. Samuel Lister	Texaco	Atty	713-650
H.W. Miller	Texaco	Manager Services	713-432-

TEXAS DEPARTMENT OF WATER RESOURCES

CONFERENCE RECORD

Project: Jefferson Canal - Solid Waste Registration 30029

Conference date: March 8, 1984 Place: SFA Building - Rm. 1028

Type of conference: Informal
(telephone, staff, formal or informal hearing,
other)

Attendance:

Name	Agency
See Attachment	

Summary:

The outcome of this meeting was that Texaco would immediately start sampling the dredge spoil for classification and disposal alternatives. Texaco would respond by March 12, 1984 as to whether they would be willing to make an assessment of the upper reaches of Jefferson Canal. We informed Texaco that a decision would be made on March 12, 1984 as to whether the Attorney General's Office would file suit.

MGD:py

ccs: TDWR District 6 Office
Office of the General Counsel

MAR 14 1984

TEXAS DEPARTMENT OF
WATER RESOURCES
DISTRICT 6

Prepared by: _____

WATER RESOURCES
DIVISION
MAR 28 1984

Due to difficulties encountered in making telephone contact, the following is being utilized as a means of apprising you of Texas's current position on several matters relating to the material dredged from Star Lake Outfall Canal by Drainage District No. 7 and piled on its easement along the canal by the District.

As has been communicated to Mr. Michael Dick of the Texas Department of Water Resources, Texas is willing to undertake a program for sampling sediment in the drainage ditch between the Port Neches Chemical Plant and Highway 366, which is upstream of the area where Drainage District No. 7 has performed its dredging. Preliminary plans for a sampling program have been developed, and should be initiated shortly. Texas has also developed a preliminary plan for representative sampling of the dredged spoil, in order to confirm its waste classification. When this is complete, the results will be communicated to the Texas Department of Water Resources for its review in connection with the classification.

With further regard to the dredged spoil, Texas is willing to participate in its disposal in a manner acceptable to the state. It is Texas's intent to seek drainage district No. 7's participation in the disposal.

Dear Mr. Cross:
Kenneth Cross, Esquire
Office of the Attorney General
Supreme Court Building
Austin, Texas 78711

DREDGED MATERIAL-STAR LAKE
OUTFALL CANAL

MARCH 16, 1984

J. SAMUEL JUSTAK
ATTORNEY

HOUSTON, TEXAS 77062
P.O. BOX 52332
FISHING-550-1251

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TEXACO
INC.

Kenneth Cross, Esq.

- 2 -

March 16, 1987

Lastly, it has already been determined that there is no locally available municipal landfill in the Port Neches area which would dispose of this material so this does not appear to be a viable disposal option.

Sincerely,

Signed: J. SAMUEL LISTIAK

J. SAMUEL LISTIAK

JSL
cz:2/ee

cc: Mary Reagan, Esq.
Texas Department of
Water Resources
P.O. Box 13087
Capitol Station
Austin, Texas 78711

✓ Mr. Michael Dick
Texas Department of
Water Resources
P.O. Box 13087
Capitol Station
Austin, Texas 78711

Peter Steele, Esq.
Provost, Umphrey, McPherson
& Swearingen
4800 Twin City Highway
P.O. Box 3837
Port Arthur, Texas 77640

bc: HWMiller



H.W. MILLER
MANAGER - SERVICES

File # 30027
APR 17 1984
RECEIVED

TEXACO
CHEMICAL APPRAISAL
A DIVISION OF TEXACO INC.
P. O. BOX 430
BELLAIRE, TEXAS 77401
713-202-2000
FIELD OPERATIONS

April 16, 1984

Mr. Michael Dick
Texas Department of
Water Resources
P. O. Box 13087
Capitol Station
Austin, Texas 78711

Dear Mr. Dick:

DREDGED MATERIAL-STAR
LAKE OUTFALL CANAL

In reference to my subject memorandum of March 26, the sampling of the dredge spoil and the sediment in the Jefferson Canal was completed last week.

The sampling of the dredge spoil was accomplished as previously outlined. The Jefferson Canal samples were obtained as planned; however, the sample taken between the railroad and Highway 366 will not be composited with the four upstream samples since the appearance of this material differs substantially from the others. A separate top, middle and bottom analysis will be run on this sample with the other four samples being composited as originally outlined.

The sampling was delayed beyond the projection time due to the arrangements with the contractor taking longer than anticipated coupled with having to modify the specialty sampling equipment to perform this specific work.

Work will commence this week on making up the samples for analysis. The outside laboratories are being contacted in order to arrange for early attention to these samples. Pending firm commitments

APR 23 1984

D. L. OF
WATER RESOURCES
DISTRICT 6

Mr. Michael Dick

-2-

April 16, 1984

from the laboratories, it is estimated it will be 4-6 weeks before the results are available. If this schedule changes substantially, you will be so advised.

Very truly yours,

H. W. Miller

H. W. Miller

HWM:bjb/50

attachment

cc: Mary Reagan, Esq.
Texas Department of
Water Resources
P. O. Box 13087
Capitol Station
Austin, TX 78711

Mr. Kenneth Cross, Esquire
Office of the Attorney General
P. O. Box 12548, Capitol Station
Austin, Texas 78711



H.W. MILLER
MANAGER - SERVICES

mm
TEXACO
CHEMICAL COMPANY
A DIVISION OF TEXACO INC.
P.O. BOX 430
BELLAIRE, TEXAS 77401
(713) 432-3029

June 28, 1984

#30029

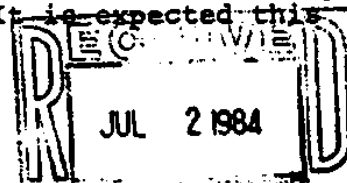
Mr. Michael Dick
Texas Department of Water Resources
P. O. Box 13087
Capitol Station
Austin, Texas 78711

Dear Mr. Dick:

We want to apologize for the length of time it took the contract laboratories to analyze samples from the Star Lake dredge material and core samples taken from the Texaco Chemical Company stormwater canal. The stormwater canal is upstream of Star Lake and in the past has also been used with effluent and stormwater from Chemall and its predecessors.

The dredge material was sampled at eight locations with samples taken at four depths for a total of 32 samples. The 32 samples were composited and mixed in a mechanical blender. Samples of the blended composite were sent to Spectrix Corporation, Houston and Southwestern Laboratories, Houston for analysis for priority pollutants by EPA approved methods. Southwestern Laboratories subcontracted the GC-MS analysis to Chromospec Corporation, Houston. Results of the analysis of the dredged material is given in attached Table 1. Also included in Table 1 are:
(1) results on a grab sample of dredge material taken by Texaco Chemical Company and analyzed by Spectrix Corporation and
(2) results on a grab sample by the local TDWR representative which was sent to the Austin office of the TDWR for analysis. We are concerned with the lack of agreement of the results obtained for priority pollutants between the two contract laboratories on the same composite sample of dredged material. However, a comparison of all of the data indicates the earlier TDWR sample was not representative of the total dredged material.

The differences in results obtained on the composite samples by the two laboratories will be analyzed by a Texaco expert in this analytical technique to determine if this kind of variation is typical. If not, a visit to the laboratories will be made to try and establish reasons for these variations. It is expected this



Mr. Michael Dick

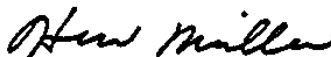
-2-

June 28, 1984

will be completed and that we will be in a position to meet and discuss these results with you in about two to three weeks.

Also, we have included GC-MS results on core samples from the Texaco Chemical Company stormwater canal upstream of the Star Lake dredged material. As with the results obtained on the dredged material, we plan to have the data reviewed by a Texaco GC-MS expert and will discuss the results of the investigation at the meeting on the dredged material.

Very truly yours,



H. W. Miller

GDE-AWC
mc:D/dd

cc: Mr. Harry Boudreaux
TDWR District 6 Office
P. O. Box 337
Orange, Texas 77630

TABLE 1
DREDGED MATERIAL RESULTS

Priority Pollutants
wt. ppm

	Grab Sample by TDWR - Results from TDWR	Grab Sample by Texaco - Analyzed by Spectrix	Composite of 32 Samples by Southwestern L& Analyzed by Chromospec	
			Analyzed by Chromospec	Analyzed by Spectrix
Methyl Napthalene				35
Diethylphthalate		1.2	112	
Phenanthrene			3500	
Di-n-Octylphthalate			156	
Di-N-Butylphthalate		2.1		
Ethyl Benzene				11
Pyrene		0.7	1100	26
Napthalene	2080			
Acenapthylenes	2140	110	76	30
Fluorene	1140			29
Anthracene	300			62
Chrysene	150		325	
Perylene			76	
Toluene				7
Total Xylenes				4
Acetone				19
Styrene				24
Fluoranthene	275	0.3		13
Phenanthrene	2050			
Benzopyrenes	60	0.6		
Total Benzo fluoranthenes	30	0.3		
Toxaphene	210			
Acenapthane	330			
Benzoanthracene	160			
Other PNA's	2000			

D/dd1
6/28/84

TABLE 2

wt. ppm

Composite from Cores #2&3 Approx. 1500' & 2000' from Hogaboom Rd.				Core #4 Approx. 2200' from Hogaboom Rd.			Core #5 Approx. 150' North of Hwy. 366		
0-4"	4"-24"		24-31"	0-4"	4"-155"	15.5"-28"	0-23"	23"-31"	
S.W. Labs	S.W. Labs	Spectrix	S.W. Labs	S.W. Labs	S.W. Labs	S.W. Labs	S.W. Labs	Spectrix	S.W. Labs
	23		4	34		34	114	1,900	
	6	6	1	51	19	24	10,600	310	35
800	205		21	94	63	150			91
117	39		6		67	65			70
43	10		2						
					5		2,600	330	
							3,300		
							700	320	
					4		441	600	
					10		1,300	1,300	
							2,400		
								7	
								170	
								140	
								3	
								5	
					2				
								180	
								190	
								1,200	

Analytical tests to Chromospec Labs - Houston, TX

TEXAS DEPARTMENT OF WATER RESOURCES
P. O. Box 13087 Capitol Station
Austin, Texas 78711

SMM
→ HB
Mike with
discuss

TELEPHONE MEMO TO THE FILE

(Please complete with typewriter or black pen)

Call To: LARRY HAGEN Call From: MIKE DICK
Date of Call: 7/25/84 File No.: _____
Phone No.: (____) _____ Subject: TEXACO CHEMICAL
(STAR LAKE CUTFALL DITCH) P-1 Noches

Information for File:

MIKE SAID A MEETING WITH WITH
TEXACO CHEMICAL HAS BEEN SET
FOR 1130 PM AUG 9, 1984 IN ROOM
1028 SFA BLDG. MIKE MOORE MAY
WISH TO ATTEND. CALL BACK FOR DETAILS

Signed:

Larry Hagen RS

TEXAS DEPARTMENT OF WATER RESOURCES

CONFERENCE RECORD

Project: Texaco # 30029

Conference date: August 9, 1984 Place: SFA Bldg. Rm. 1028A

Type of conference: Formal

(telephone, staff, formal or informal hearing,
other)

Attendance:

Name	Agency
See attachment	

Summary:

Texaco agreed to the following.

1. Remove and dispose properly of all dredge spoil from Hwy 366 to the Railroad Trussel (DD7 to dredge and concrete this area).
2. Sample remaining sediments for PNA's and Toxaphene.
3. Sample all dredge spoil to be left on site for Toxaphene for purposes of deed recordation.
4. Perform Toxaphene analyses on previously collected samples from Hogaboom Rd. to Intersection at Hwy. 366 (from 0-12").
5. All Toxaphene analyses will be for total and E. P. Tox.

We informed Texaco that we would forward this information to the Ken Cross at the A. G.'s office. Additionally, Texaco agreed that all laboratory results reported by S. W. Labs (Chromospec) were invalid. Texaco was able to reproduce the spectric laboratory results from split samples run in house.

AUG 23 1984

Prepared by: Michael Smith

TDH

000942

000943

TS
J Samuel Listiak
Attorney

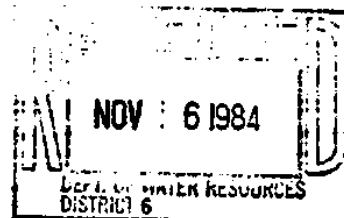

Texaco Inc

mm
PO Box 5332
Houston TX 77052
713 650 4221

November 15, 1984

RE: STAR LAKE OUTFALL CANAL

Mary Reagan, Esquire
Texas Department of Water Resources
P. O. Box 13087
Capitol Station
Austin, Texas 78711



Dear Ms. Reagan:

Texaco Chemical contracted with Spectrix Corporation Laboratories to analyze various Star Lake Outfall Canal samples for toxaphene. The results it reported are tabulated below:

<u>Sample*</u>	<u>Toxaphene</u> mg/kg	<u>EP Toxicity</u> <u>Toxaphene</u> mg/l
TDWR composite close to Hogaboom	Not tested	0.010
TDWR composite close to B-1	" "	0.014
B-1 0-5"	15	Not tested
B-1 12-30"	46	" "
B 2-3 composite 0-4"	23	" "
B 2-3 composite 4"-24"	2.7	" "
B-4 0-4"	26	" "
B-4 4-15-1/2"	46	" "
Special between concrete ditch & Hwy. 366 0-12"	1.2	" "
Special between concrete ditch & Hwy. 366 12-18"	N.D. (0.3) ¹	" "
B-5 0-24" composite	N.D. (10) ¹	N.D. (0.0065) ¹
B-5 26-31"	N.D. (0.3) ¹	Not tested
Dredge material composite	N.D. (8) ¹	" "

¹() = Detection Limit.

* Sample locations are identified on the attached map.

Mary Reagan, Esquire
November 15, 1984
Page 4

The earliest we will be able to meet to discuss this matter will be the week of November 26.

Sincerely,

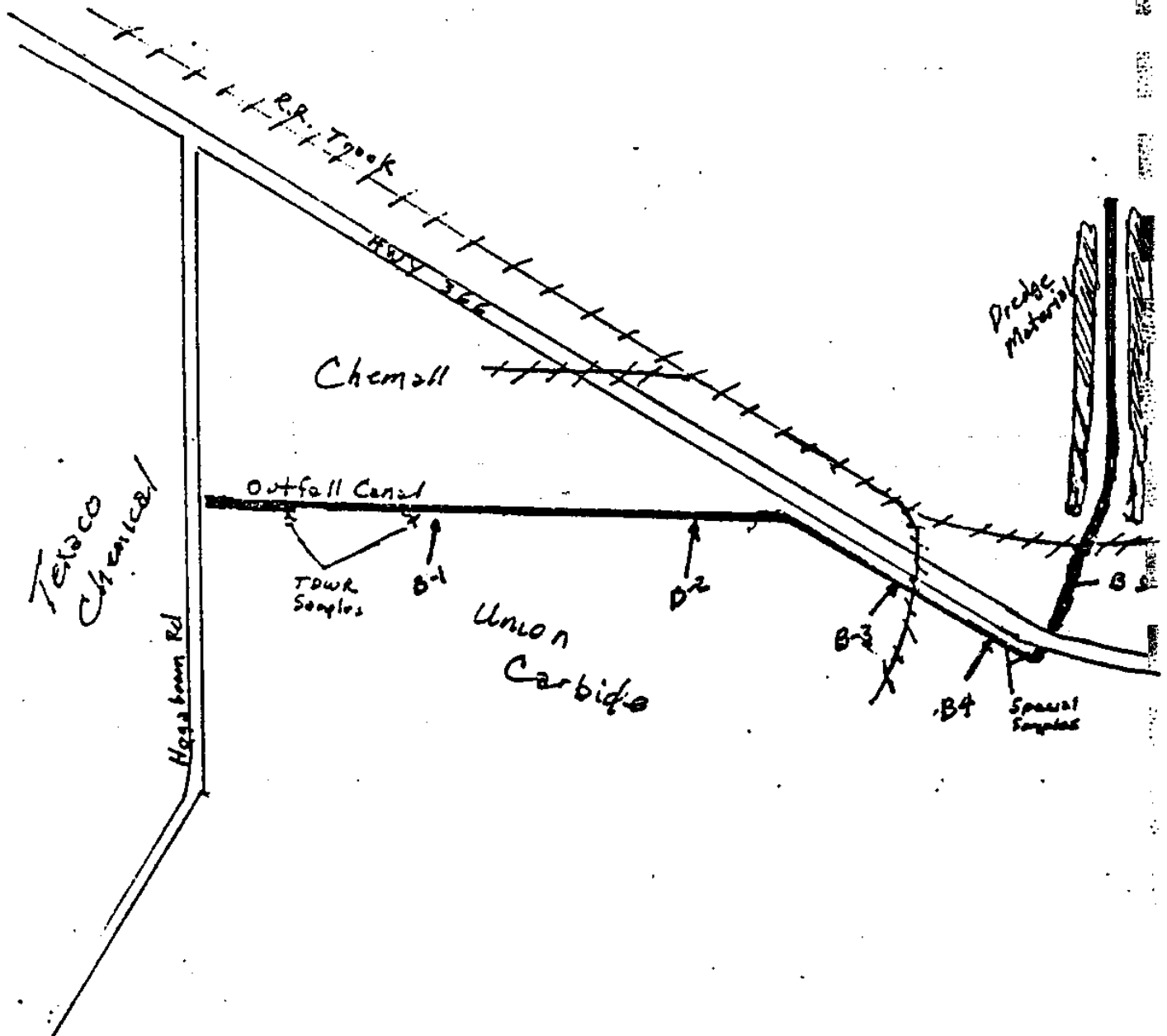


J. SAMUEL LISTIAK

JSL
cz:1/d1
Attachment

cc: Mr. Michael Dick
TDWR District Office
Orange, Texas

STAR LAKE OUTFALL CANAL SAMPLE LOCATION



Scale - ft

AWC
11-13-74

APPENDIX E

TEXAS BIOLOGICAL AND CONSERVATION DATA SYSTEM
TEXAS PARKS AND WILDLIFE DEPARTMENT
08 OCT 1996

NAME: ROOKERY

COMMON NAME:

OTHER NAME: COLONY # 601-120, SYDNEY ISLAND

FEDERAL STATUS:

STATE STATUS:

GLOBAL RANK:

STATE RANK:

IDENTIFIED: Y

TRACK: Y

SENSITIVITY:

COUNTY: Orange

USGS TOPO MAPS:

TOPO QUAD:

MARGIN #:

WEST OF GREENS BAYOU

2909387

3

ELEMENT OCCURRENCE NUMBER: 174

DATE LAST OBSERVED: 1992

PRECISION: S

DATE FIRST OBSERVED: 1973

OCCURRENCE RANK:

DATE SURVEYED:

SURVEY COMMENTS:

MANAGED AREAS:

CONTAINED:

SYDNES ISLAND

Y

DIRECTIONS:

SPOIL ISLAND ALONG GIWW--SYDNEY ISLAND; EAST-SOUTHEAST OF OLD RIVER
COVE

DESCRIPTION:

DREDGED MATERIAL ISLAND WITH GRASS AND PRICKLY PEAR TO 1 METER, SHRUBS
TO 1.3 METERS, SCATTERED TREES TO 4 METERS; MAXIMUM ELEVATION 2 METERS
OR LESS; HUMAN DISTURBANCE MODERATE

QUALITATIVE/QUANTITATIVE DATA:

NESTING COLONY OF THE BLACK SKIMMER

MANAGEMENT COMMENTS:

PROTECTION COMMENTS:

OTHER COMMENTS:

COLONY NUMBER 601-120

SOURCE OF INFORMATION:

TEXAS COLONIAL WATERBIRD SOCIETY AND TPWD. 1991-1992. SPECIAL
ADMINISTRATIVE REPORTS, TCW ANNUAL CENSUS SUMMARIES.

TEXAS BIOLOGICAL AND CONSERVATION DATA SYSTEM
TEXAS PARKS AND WILDLIFE DEPARTMENT
08 OCT 1996

NAME: ROOKERY

COMMON NAME:

OTHER NAME: COLONY # 601-100, TEXACO

FEDERAL STATUS:

STATE STATUS:

GLOBAL RANK:

STATE RANK:

IDENTIFIED: Y

TRACK: Y

SENSITIVITY:

COUNTY: Jefferson

USGS TOPO MAPS:

TOPO QUAD:

MARGIN #:

PORT ARTHUR NORTH

2909388

1

ELEMENT OCCURRENCE NUMBER: 175

DATE LAST OBSERVED: 1976

PRECISION: S

DATE FIRST OBSERVED: 1976

OCCURRENCE RANK:

DATE SURVEYED:

SURVEY COMMENTS:

MANAGED AREAS:

CONTAINED:

DIRECTIONS:

PETROLEUM TANK CONSTRUCTION PAD; WEST OF HOUSTEN SCHOOL IN PORT ARTHUR; NORTH OF OIL REFINERY IN PORT ARTHUR; SOUTHWEST CORNER OF INTERSECTION OF HIGHWAY 73 AND 287

DESCRIPTION:

UNVEGETATED SHELL; MAXIMUM ELEVATION 1 METER; HUMAN DISTURBANCE HEAVY

QUALITATIVE/QUANTITATIVE DATA:

NESTING COLONY OF THE BLACK SKIMMER

MANAGEMENT COMMENTS:

PROTECTION COMMENTS:

OTHER COMMENTS:

COLONY NUMBER 601-100

SOURCE OF INFORMATION:

MULLINS, L.M. ET.AL. 1982. ET.SEQ. ATLAS & CENSUS OF TEXAS WATERBIRD COLONIES, 1973-1980. TX COLONIAL WATERBIRD SOCIETY. (AND SPECIAL ADMINISTRATIVE REPORT FOR 1989, 1988, 1987, AND 1986.)

TEXAS BIOLOGICAL AND CONSERVATION DATA SYSTEM
TEXAS PARKS AND WILDLIFE DEPARTMENT
08 OCT 1996

NAME: ROOKERY

COMMON NAME:

OTHER NAME: COLONY # 587-120, MCFADDEN

FEDERAL STATUS:

STATE STATUS:

GLOBAL RANK:

STATE RANK:

IDENTIFIED: Y

TRACK: Y

SENSITIVITY:

COUNTY: Jefferson

USGS TOPO MAPS:

TOPO QUAD:

MARGIN #:

BEAUMONT EAST

3009411

3

ELEMENT OCCURRENCE NUMBER: 178

DATE LAST OBSERVED: 1990

PRECISION: S

DATE FIRST OBSERVED: 1980

OCCURRENCE RANK:

DATE SURVEYED:

SURVEY COMMENTS:

MANAGED AREAS:

CONTAINED:

DIRECTIONS:

RIVER BOTTOM SITE ALONG NECHES RIVER; AT JEFFERSON AND ORANGE COUNTY
LINE; SOUTHEAST OF CITY OF BEAUMONT

DESCRIPTION:

RIVER BOTTOM SITE WITH HARDWOOD TREES TO 5 METERS; MAXIMUM ELEVATION
10 METERS

QUALITATIVE/QUANTITATIVE DATA:

NESTING COLONY OF THE OLIVACEOUS CORMORANT, SNOWY EGRET, CATTLE EGRET,
ROSEATE SPOONBILL, GREAT EGRET

MANAGEMENT COMMENTS:

PROTECTION COMMENTS:

OTHER COMMENTS:

COLONY NUMBER 587-120

SOURCE OF INFORMATION:

TEXAS COLONIAL WATERBIRD SOCIETY AND TPWD. 1990. SPECIAL
ADMINISTRATIVE REPORT, TCW ANNUAL CENSUS SUMMARY.

TEXAS BIOLOGICAL AND CONSERVATION DATA SYSTEM
TEXAS PARKS AND WILDLIFE DEPARTMENT
08 OCT 1996

NAME: ROOKERY

COMMON NAME:

OTHER NAME: COLONY # 587-121, BEAUMONT SHIP CHANNEL

FEDERAL STATUS:

STATE STATUS:

GLOBAL RANK:

STATE RANK:

IDENTIFIED: Y

TRACK: Y

SENSITIVITY:

COUNTY: Jefferson

USGS TOPO MAPS:

BEAUMONT EAST

TOPO QUAD:

3009411

MARGIN #:

2

ELEMENT OCCURRENCE NUMBER: 177

DATE LAST OBSERVED: 1990

PRECISION: S

DATE FIRST OBSERVED: 1976

OCCURRENCE RANK:

DATE SURVEYED:

SURVEY COMMENTS:

MANAGED AREAS:

CONTAINED:

DIRECTIONS:

SPOIL ISLAND ALONG MCFADDEN BEND CUTOFF; AT JEFFERSON AND ORANGE
COUNTY LINE

DESCRIPTION:

SHRUBS ON DREDGED MATERIAL ISLAND; MAXIMUM ELEVATION 1 METER

QUALITATIVE/QUANTITATIVE DATA:

NESTING COLONY OF THE GREAT EGRET, ROSEATE SPOONBILL, ANHINGA

MANAGEMENT COMMENTS:

PROTECTION COMMENTS:

OTHER COMMENTS:

COLONY NUMBER 587-121

SOURCE OF INFORMATION:

TEXAS COLONIAL WATERBIRD SOCIETY AND TPWD. 1990. SPECIAL
ADMINISTRATIVE REPORT, TCW ANNUAL CENSUS SUMMARY.

TEXAS BIOLOGICAL AND CONSERVATION DATA SYSTEM
TEXAS PARKS AND WILDLIFE DEPARTMENT
MANAGED AREA INFORMATION
08 OCT 1996

NAME: LOWER NECHES WILDLIFE MANAGEMENT AREA

MANAGED AREA TYPE CODE: SPWWM

COUNTY NAME(S): Orange

USGS TOPO QUADS: TERRY
ORANGE
ORANGEFIELD
WEST OF GREENS BAYOU
ECHO

ESTABLISHED: 1986- - ESTABLISHED SIZE: 11113.00
DESCRIPTION: FLOODPLAIN WETLANDS BETWEEN THE NECHES AND SABINE
RIVERS; CONSISTS OF FOUR NON-CONTIGUOUS
UNITS--NELDA STARK UNIT, OLD RIVER UNIT, ADAMS
BAYOU UNIT, AND BLUE ELBOW--SEE INDIVIDUAL UNIT
RECORDS FOR ADDITIONAL INFORMATION

COMMENTS: ACCESS RESTRICTED TO PERMITTED HUNTERS; BOUNDARIES
ARE APPROXIMATE

MANAGEMENT:

MANAGER: JIM SUTHERLIN
MGR.INST.:

ADDRESS: 10 PARKS AND WILDLIFE DRIVE
PORT ARTHUR , TX 77640
PHONE: 409 736-2551

TEXAS BIOLOGICAL AND CONSERVATION DATA SYSTEM
TEXAS PARKS AND WILDLIFE DEPARTMENT
MANAGED AREA INFORMATION
08 OCT 1996

NAME: SYDNES ISLAND

MANAGED AREA TYPE CODE: PNAPR

COUNTY NAME(S): Orange

USGS TOPO QUADS: WEST OF GREENS BAYOU

ESTABLISHED: 1974-11-05 ESTABLISHED SIZE: 128.00

DESCRIPTION: SPOIL ISLAND CREATED BY DREDGING ACTIVITIES
(1955). ISLAND HAS BECOME NESTING SITE FOR
NUMEROUS BIRD SPECIES

COMMENTS: LEASED FROM GLO UNDER LEASE NO. CL-1001 TO YR 2005

MANAGEMENT:

MANAGER: SUE BAILEY

MGR.INST.:

ADDRESS: P.O. BOX 11

BRIDGE CITY

PHONE: 409 735-4298

, TX 77611

TEXAS BIOLOGICAL AND CONSERVATION DATA SYSTEM
TEXAS PARKS AND WILDLIFE DEPARTMENT
MANAGED AREA INFORMATION
08 OCT 1996

NAME: LOWER NECHES WMA - NELDA STARK UNIT
MANAGED AREA TYPE CODE: SPWWM
COUNTY NAME(S): Orange

USGS TOPO QUADS: TERRY

ESTABLISHED: SIZE: 3451.00
DESCRIPTION:

COMMENTS: BOUNDARIES ARE APPROXIMATE; ACCESS RESTRICTED TO
PERMITTED HUNTERS

MANAGEMENT:

MANAGER: JIM SUTHERLIN
MGR.INST.:

ADDRESS: 10 PARKS AND WILDLIFE DRIVE
PORT ARTHUR , TX 77640
PHONE: 409 736-2551

DRAFT

TEXAS PARKS AND WILDLIFE DEPARTMENT
ENDANGERED RESOURCES BRANCH
SPECIAL SPECIES LIST
JEFFERSON COUNTY

DRAFT

Revised:
96-10-10

Scientific Name	Common Name	Federal Status	State Status
-----------------	-------------	----------------	--------------

*** AMPHIBIANS

RANA GRYLIO	PIG FROG		
-------------	----------	--	--

*** BIRDS

CHARADRIUS MELODUS	PIPING PLOVER	LT	T
EGRETTA RUFESCENS	REDDISH EGRET	SOC	T
FALCO PEREGRINUS ANATUM	AMERICAN PEREGRINE FALCON	LE	E
FALCO PEREGRINUS TUNDRIUS	ARCTIC PEREGRINE FALCON	E/SA	T
MYCTERIA AMERICANA	WOOD STORK		T
PELECANUS OCCIDENTALIS	BROWN PELICAN	LE	E
PLEGADIS CHIHII	WHITE-FACED IBIS	SOC	T
STERNA ANTILLARUM ATHALASSOS	INTERIOR LEAST TERN	LE	E

*** MAMMALS

CANIS RUFUS	RED WOLF	LE	E
CORYNORHINUS RAFINESQUII	RAFINESQUE'S BIG-EARED BAT	SOC	T

*** REPTILES

CARETTA CARETTA	LOGGERHEAD SEA TURTLE	LT	E
CEMOPHORA COCCINEA COPEI	NORTHERN SCARLET SNAKE		T
CHELONIA MYDAS	GREEN SEA TURTLE	LT	T
CROTALUS HORRIDUS	TIMBER RATTLESNAKE		T
DERMOCHELYS CORIACEA	LEATHERBACK SEA TURTLE	LE	E
ERETMOCHELYS IMBRICATA	HAWKSBILL SEA TURTLE	LE	E
LEPIDOCHELYS KEMPII	KEMP'S RIDLEY SEA TURTLE	LE	E
MACROCLEMYS TEMMINCKII	ALLIGATOR SNAPPING TURTLE	SOC	T
MALACLEMYS TERRAPIN LITTORALIS	TEXAS DIAMONDBACK TERRAPIN	SOC	
NERODIA CLARKII	GULF SALT MARSH SNAKE	SOC	
PHRYNOSOMA CORNUTUM	TEXAS HORNED LIZARD	SOC	T

*** VASCULAR PLANTS

ELEOCHARIS WOLFII	WOLF'S SPIKESEDGE	SOC	
LEITNERIA FLORIDANA	CORKWOOD	SOC	
SILENE SUBCILIATA	SCARLET CATCHFLY	SOC	

Codes:

LE, LT - Federally Listed Endangered/Threatened
PE, PT - Federally Proposed Endangered/Threatened
E/SA, T/SA - Federally Endangered/Threatened by Similarity of Appearance
C1 - Federal Candidate, Category 1; information supports proposing to list as endangered/threatened
SOC - Federal Species of Concern
DL, PDL - Federally Delisted/Proposed Delisted
E, T - State Endangered/Threatened

G#T# - "G"= species rank; "T"= rank of variety or subspecies taxa.
GU - Possibly in peril range-wide, but status uncertain.
G#G# - Ranked within a range as status uncertain.
GX - Believed to be extinct throughout range.
Q - Qualifier denoting questionable taxonomic assignment.
? - Not ranked to date; or, Qualifier denoting uncertain rank.
C - Captive population exists.

STATE RANK (SRANK)

S1 - Critically imperiled in state, extremely rare, very vulnerable to extirpation, 5 or fewer occurrences.
S2 - Imperiled in state, very rare, vulnerable to extirpation, 6 to 20 occurrences.
S3 - Rare or uncommon in state, 21 to 100 occurrences.
S4 - Apparently secure in state.
S5 - Demonstrably secure in state.
SA - Accidental in state.
SE - An exotic species established in state.
SH - Of historical occurrence in state. May be rediscovered.
SP - Potential occurrence in state.
SR - Reported, but without persuasive documentation.
SRF - Reported in error, but error persists in literature.
SU - Possibly in peril in state, but status uncertain.
SX - Apparently extirpated from State.
SZ - Migratory/transient in state to irregular/dispersed locations.
B - Basic rank refers to the breeding population in the state.
N - Basic rank refers to the non-breeding population in the state.
? - Not ranked to date; or, Qualifier denoting uncertain rank.
C - Captive population exists.

PRECISION

S - Second: Accuracy within 3-second radius of latitude/longitude.
M - Minute: Accuracy within 1-minute radius of lat/long, approx. 2 km or 1.5 mi radius.
G - Occurrence mapped general to quad or place name precision only, precision within about 8 km or 5 mi radius.
U - Unmappable record.

OCCURRENCE RANK

A - Excellent	AI - Excellent, Introduced
B - Good	BI - Good, Introduced
C - Marginal	CI - Marginal, Introduced
D - Poor	DI - Poor, Introduced
E - Extant/Present	EI - Extant, Introduced
H - Historical/No Field Information	HI - Historical, Introduced
O - Obscure	OI - Obscure, Introduced
X - Destroyed/Extirpated	XI - Destroyed, Introduced

MANAGED AREA - CONTAINED (code following managed area name)

Y - Element occurrence contained within managed area boundaries.
N - Element occurrence is not entirely contained within managed area boundaries.
? - Whether the element occurrence is wholly contained or not within managed area boundaries is disputed.
blank - No information available.

CODE KEY

FEDERAL STATUS (USES)

- LE - Listed Endangered
- LT - Listed Threatened
- LELT - Listed Endangered in part of range, Threatened in a different part
- PE - Proposed to be listed Endangered
- PT - Proposed to be listed Threatened
- E(S/A) or T(S/A) - Listed Endangered or Threatened on basis of Similarity of Appearance.
- DL - Delisted Endangered/Threatened
- C1 - Candidate, Category 1. USFWS has substantial information on biological vulnerability and threats to support proposing to list as endangered or threatened. Data are being gathered on habitat needs and/or critical habitat designations.
- C1* - C1, but lacking known occurrences
- C1** - C1, but lacking known occurrences, except in captivity/cultivation
- C2 - Candidate, Category 2. Information indicates that proposing to list as endangered or threatened is possibly appropriate, but substantial data on biological vulnerability and threats are not currently known to support the immediate preparation of rules. Further biological research and field study will be necessary to ascertain the status and/or taxonomic validity of the taxa in Category 2.
- C2* - C2, but lacking known occurrences
- C2** - C2, but lacking known occurrences, except in captivity/cultivation
- 3 - Taxa no longer being considered for listing as threatened or endangered. Three subcategories indicate the reasons for removal from consideration.
- 3A - Former Candidate, rejected because presumed extinct and/or habitats destroyed
- 3B - Former Candidate, rejected because not a recognized taxon; i.e. synonym or hybrid
- 3C - Former Candidate, rejected because more common, widespread, or adequately protected
- XE - Essential Experimental Population.
- XN - Non-essential Experimental Population.

STATE STATUS

- E - Listed as Endangered in the State of Texas
- T - Listed as Threatened in the State of Texas

GLOBAL RANK (GRANK)

- G1 - Critically imperiled globally, extremely rare, 5 or fewer occurrences. [Critically endangered throughout range.]
- G2 - Imperiled globally, very rare, 6 to 20 occurrences. [Endangered throughout range.]
- G3 - Very rare and local throughout range or found locally in restricted range, 21 to 100 occurrences. [Threatened throughout range.]
- G4 - Apparently secure globally.
- G5 - Demonstrably secure globally.
- GH - Of historical occurrence through its range.

APPENDIX F

Texas Natural Resource Conservation Commission

INTEROFFICE MEMORANDUM

Population Around Star Lake Canal

Jefferson County, Texas

Location of site: Latitude 29 degrees, 58 minutes, 42 seconds N
 Longitude 93 degrees, 55 minutes, 04 seconds W

The following estimated population totals are based on block-level 1990 U.S. Census Bureau data, which is the most current and detailed population data available. Since census blocks vary in size and since some blocks lie only partially within a circle described by a given radius, these numbers were computed by averaging the highest and lowest possible population totals for each radius.

Radius (mi)	Highest	Lowest	Average
.25	0	0	0
.5	0	0	0
1	380	0	190
2	7,121	4,713	5,918
3	25,414	20,527	22,970
4	46,768	39,924	43,346

Given the above average population numbers, the estimated total population that lives within each distance range from the site can be computed:

Distance Range	Estimated Population
0 to .25	0
.25 to .5	0
.5 to 1	190
1 to 2	5,728
2 to 3	17,052
3 to 4	20,376

M McDonough
GIS Section

09/16/96
CRF 970916004

APPENDIX G

FIELD AUDIT CHECKLIST

Case No.: 25093

Project Name: Star Lake Canal

Site Investigation Manager: Marshall Cedilote

Auditor: DeAnna Epperson

Dates of Field Audit: 10/22/96 - 10/24/96

- ☐ The Site-Specific Health and Safety Plan has been prepared by the TNRCC Site Investigation Manager and subsequently approved by the TNRCC Project Manager and TNRCC Health and Safety Officer prior to arrival to the site.

Yes ☒ No ☐

Comments _____

- ☐ The Site-Specific Health and Safety Plan has been signed by all who intend to enter within the site boundaries prior to entry onto the site.

Passed ☒ Failed ☐

Comments Each member of the team signed and dated the Health and Safety daily briefing sheet each day of the site investigation.

- ☐ Project organization:

Did the Site Investigation Manager hold a briefing with each participant to go over any concerns or questions for project organization; and

Did the Site Investigation Manager provide appropriate number and types of material supplies necessary to collect samples (jars, bottles, gloves, pens, coolers, coolant, preservatives, protective gear, Work Plan, Health and Safety Plan, CLP, QAPP or other reference material)?

Adequate ☒ Marginal ☐ Failed ☐

Comments _____

- o Were additional instructions given to each participant not otherwise found in the preliminary written material, such as the Site-Specific Work Plan, Health and Safety Plan, CLP or QAPP?

Not Applicable _X_

Additional Instructions: _____

- o Samples collection procedures:

The Site Investigation Manager ensured that the sampler collected adequate volumes of sample to allow for the planned sample analyses and field duplicates, plus any laboratory QC blanks and laboratory QC duplicates/spikes, as applicable; and

The Site Investigation Manager provided a supply of the appropriate type of sample containers for the samples collected.

No Modifications _X_ Modifications ____ Failed ____

Comments: _____

- o Were samples collected as stated in the Site-Specific Work Plan (number, frequency, and type)?

No Modifications ____ Modifications _X_

Sample Modifications

Comments: One sample and its duplicate were omitted from the original sampling plan.

- o Sample container labeling:

The Site Investigation Manager ensured that the sample tags were properly completed and attached to each sample container;

The Site Investigation Manager ensured that the custody seals were properly completed and attached to each sample container in unbroken condition; and

The Site Investigation Manager ensured that each sample container was labeled with the sample number and protected with clear tape.

Passed _X_ Failed ____

Comments: _____

- o Each traffic report has been completed, original copy mailed to EPA, and copies corrected as necessary.

Passed _X_ Failed ____

Comments: _____



TEXAS
PARKS AND WILDLIFE DEPARTMENT

4200 Smith School Road • Austin, Texas 78744 • 512-389-4800

RECEIVED

OCT 14 1996

ANDREW SANSOM
Executive Director

COMMISSIONERS

LEE M. BASS
Chairman, Ft. Worth

NOLAN RYAN
Vice-Chairman
Alvin

MICKEY BURLESON
Temple

RAY CLYMER
Wichita Falls

YGNACIO D. GARZA
Brownsville

RICHARD (DICK) HEATH
Dallas

TERESE TARTLTON HERSHEY
Houston

SUSAN HOWARD-CHRANE
Boerne

WALTER UMPHREY
Beaumont

PERRY R. BASS
Chairman-Emeritus
Ft. Worth

October 10, 1996

Pollution Cleanup Division

Wesley G. Newberry, Unit Manager
Superfund Site Discovery and Assessment Team
Emergency Response and Assessment Section
Pollution Cleanup Division
Texas Natural Resource Conservation Commission
P.O. Box 13087
Austin, Texas 78711-3087

Dear Mr. Newberry:

Thank you for contacting us regarding your September 9, 1996 request for information on sensitive species and natural communities within or near the Star Lake Canal project area in Jefferson County. A search of the Texas Biological and Conservation Data System (BCD) revealed special species and natural communities from the general surrounding area. Printouts for nearby occurrence and managed area records and a code key are attached. I've also attached a county list for your reference. Following is information about species known from the general area. Please also note that many species of birds use the coastal region and bay systems during migration, as well as breeding and wintering areas. Many species, such as the Peregrine Falcon, would be of concern for adverse impacts from biomagnification of contaminants in the food chain or reduction in food supply.

State Threatened--

Plegadis chihi (White-faced Ibis) G5 S4

Other Species of Concern--

Laterallus jamaicensis (Black Rail) G4? S2

Malaclemys terrapin littoralis (Texas Diamondback Terrapin) G5T3 S3 - coastal marshes, tidal flats, sloughs, coves, estuaries, and lagoons behind barrier beaches; brackish and salt water; burrows into mud when inactive; may venture into lowlands at high tide

Nerodia clarkii (Gulf Saltmarsh Snake) G4Q S4 - saline flats, coastal bays, and brackish river mouths

Natural Communities--

Significant bottomland hardwood communities and other wetlands communities exist throughout the area.

Rookeries--(1992 information is most recent available)

Colony #601-121, Dooms Island

Colony #601-120, Sydney Island

Colony #601-100, Texaco

Colony #587-120, McFadden

Colony #587-121, Beaumont Ship Channel



Wesley G. Newberry
Page 2

Managed Areas--

Lower Neches Wildlife Management Area - Old River Unit
Lower Neches Wildlife Management Area - Nelda Stark Unit
Sydnes Island - Audubon Preserve

The BCD information included here is based on the best data currently available to the state regarding threatened, endangered, or otherwise sensitive species. However, these data do not provide a definite statement as to the presence or absence of special species or natural communities within your project area, nor can these data substitute for an on-site evaluation by qualified biologists. This information is intended to assist you in avoiding harm to species that occur on your site.

This letter does not constitute a review of fish and wildlife impacts that might result from the activity for which this information is provided. Should you need an impact review of this type from the Texas Parks and Wildlife Department, contact the Habitat Assessment Branch, attention Mr. Roy Frye, or contact him at 512/389-4725. All requests for reviews must be in writing.

Please contact one of the Texas Parks and Wildlife Department's BCD Information Managers before publishing printout data or otherwise disseminating any specific locality information. Thank you again for contacting us. If you have additional questions, please feel free to call me or Shannon Breslin at 512/912-7011.

Sincerely,



Dorinda Scott, Information System Manager
Texas Biological and Conservation Data System
Endangered Resources Branch

Enclosures

DLS:ds

TEXAS BIOLOGICAL AND CONSERVATION DATA SYSTEM
TEXAS PARKS AND WILDLIFE DEPARTMENT
27 SEP 1996

NAME: MALACLEMYS TERRAPIN LITTORALIS

COMMON NAME: TEXAS DIAMONDBACK TERRAPIN

OTHER NAME:

FEDERAL STATUS:

GLOBAL RANK: G5T3

IDENTIFIED: Y

COUNTY: Orange

STATE STATUS:

STATE RANK: S3

SENSITIVITY:

TRACK: Y

USGS TOPO MAPS:

WEST OF GREENS BAYOU

TOPO QUAD:

2909387

MARGIN #:

2

ELEMENT OCCURRENCE NUMBER: 021

PRECISION: M

OCCURRENCE RANK:

SURVEY COMMENTS:

DATE LAST OBSERVED:

DATE FIRST OBSERVED:

DATE SURVEYED:

MANAGED AREAS:

CONTAINED:

DIRECTIONS:

NORTH END OF SABINE LAKE.

DESCRIPTION:

QUALITATIVE/QUANTITATIVE DATA:

MANAGEMENT COMMENTS:

PROTECTION COMMENTS:

OTHER COMMENTS:

SOURCE OF INFORMATION:

TEXAS COOPERATIVE WILDLIFE COLLECTION (TEXAS A&M UNIV) 35596ONE
SPECIMEN.

TEXAS BIOLOGICAL AND CONSERVATION DATA SYSTEM
TEXAS PARKS AND WILDLIFE DEPARTMENT
27 SEP 1996

NAME: ROOKERY

COMMON NAME:

OTHER NAME: COLONY # 601-121, DOOMS ISLAND

FEDERAL STATUS:

STATE STATUS:

GLOBAL RANK:

STATE RANK:

IDENTIFIED: Y

TRACK: Y

SENSITIVITY:

COUNTY: Orange

USGS TOPO MAPS:

TOPO QUAD:

MARGIN #:

WEST OF GREENS BAYOU

2909387

4

ELEMENT OCCURRENCE NUMBER: 401

DATE LAST OBSERVED: 1984

PRECISION: S

DATE FIRST OBSERVED: 1984

OCCURRENCE RANK:

DATE SURVEYED:

SURVEY COMMENTS:

MANAGED AREAS:

CONTAINED:

DIRECTIONS:

DOOMS ISLAND, INCLUDING THE SOUTHERN TIP OF STEWTS ISLAND AT THE MOUTH
OF NECHES RIVER, NORTHWEST SABINE LAKE

DESCRIPTION:

GRAVEL/SHELL BEACH WITH BACCHARIS, SALT CEDAR, AND SEA OX-EYE ON SAND,
SOIL, AND SHELL SURFACE; NESTS SUBJECT TO FLOODING

QUALITATIVE/QUANTITATIVE DATA:

NESTING COLONY OF THE BLACK SKIMMER

MANAGEMENT COMMENTS:

PROTECTION COMMENTS:

OTHER COMMENTS:

COLONY NUMBER 601-121

SOURCE OF INFORMATION:

TEXAS COLONIAL WATERBIRD SOCIETY AND TPWD. 1981-1985. SPECIAL
ADMINISTRATIVE REPORTS, TCW ANNUAL CENSUS SUMMARIES.

- o The traffic report accompanied each shipment to the correct EPA contract lab.

Passed X Failed

Comments _____

- o Field observations are written in ink and are presented accurately in the field logbook, and each page is signed and dated.

Passed X Failed

Comments _____

- o Photographs are logged in the logbook with the date, time, location, name of person taking the picture, type of sample, sample number, and the photo number.

Yes X No

Comments _____

- o Prior to use, the Site Investigation Manager ensured that the measuring equipment was calibrated to standard procedures as presented in accompanied documents written specifically for the instrument.

Passed X Failed

Comments _____

- o Have any accountable documents been lost?

Not Applicable X

Documents Lost _____

General Comments or Concerns Regarding the Sampling Procedures, Organization, and Site Investigation Management:

This was a well organized and well planned site screening inspection. The members worked smoothly without any major problems. The project manager provided each member a briefing of their tasks and ensured the their completion to his satisfaction.

Signature of Auditor DeAnna Epperson

APPENDIX I